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Attracting Birds

SUGGESTIONS FOR BUILDING BIRD HOUSES AND BIRD BATHS, FOODS FOR BIRDS, IMPROVING ENVIRONMENT

Photo by Dr. A. A. Allen

Scarlet Tanager Feeding Hungry Mouths

EDUCATIONAL PAMPHLET No. 1

Published by

The Pennsylvania Game Commission

Harrisburg, Pa.

1940

HOW TO ATTRACT BIRDS

People everywhere are learning more to appreciate birds and are endeavoring to attract them to their homes. As a result, the Pennsylvania Game Commission receives many requests for information on how to build bird houses, bird baths, what kind of foods they like, etc. It is hoped that this little leaflet will meet the immediate needs of those who wish to know their feathered friends better, but it should be supplemented by the Commission's bulletin on "Pennsylvania Bird-Life."

This bulletin is profusely illustrated with colored pictures and photographs of most of the common birds, and contains interesting notes on their economic, esthetic, recreational and educational values. It also covers the typography and anatomy of birds, how long they live, how fast they fly, how much they weigh, what their home life is like, what kind of nests they make, how many eggs they lay, how often they moult, if and when they migrate, and facts and fallacies about them.

It tells how to study them, observe them in the field, band them, photograph them, and how to attract and build homes for them. It contains interesting chapters on their food habits, on sanctuaries, on how to control certain predatory species, laws for protecting them, and how to control their enemies.

Every citizen, school child and bird lover should have a copy of this bulletin, which can be secured from the Commission at Harrisburg for only 10 cents a copy.

Other Helpful Publications

"An Introduction to the Birds of Pennsylvania"—by Dr. George M. Sutton—published by the J. Horace McFarland Company, Harrisburg—price, $1.00.

"Birdhouses"—by Paul V. Champion—published by the Bruce Publishing Company, Milwaukee—price, $1.25.

Bulletin No. 11—"More Food for Upland Game"—issued by Pennsylvania Game Commission, Harrisburg—free.

Bulletin No. 16—"Wildlife in the Farm Program"—issued by Pennsylvania Game Commission, Harrisburg—free.

Farmers' Bulletin No. 513—United States Department of Agriculture—"Fifty Common Birds of Farm and Orchard"—price, 25 cents.

Farmers' Bulletin No. 1644—United States Department of Agriculture—"Local Bird Refuges"—free.

Farmers' Bulletin No. 1456—United States Department of Agriculture—"Homes for Birds"—free.

Farmers' Bulletin No. 912—United States Department of Agriculture—"How to Attract Birds in the Eastern Central States"—price, 5 cents.

The Fish & Wildlife Service of the United States Department of Interior also has a great many other bulletins and pamphlets on birds and their economic and esthetic values, which should be in every bird student's and school teacher's library.

Homes for Birds

Too often bird houses are designed like so many human habitations—not for a practical, livable purpose, but because of an exterior beauty which attracts us as purchasers commercially.

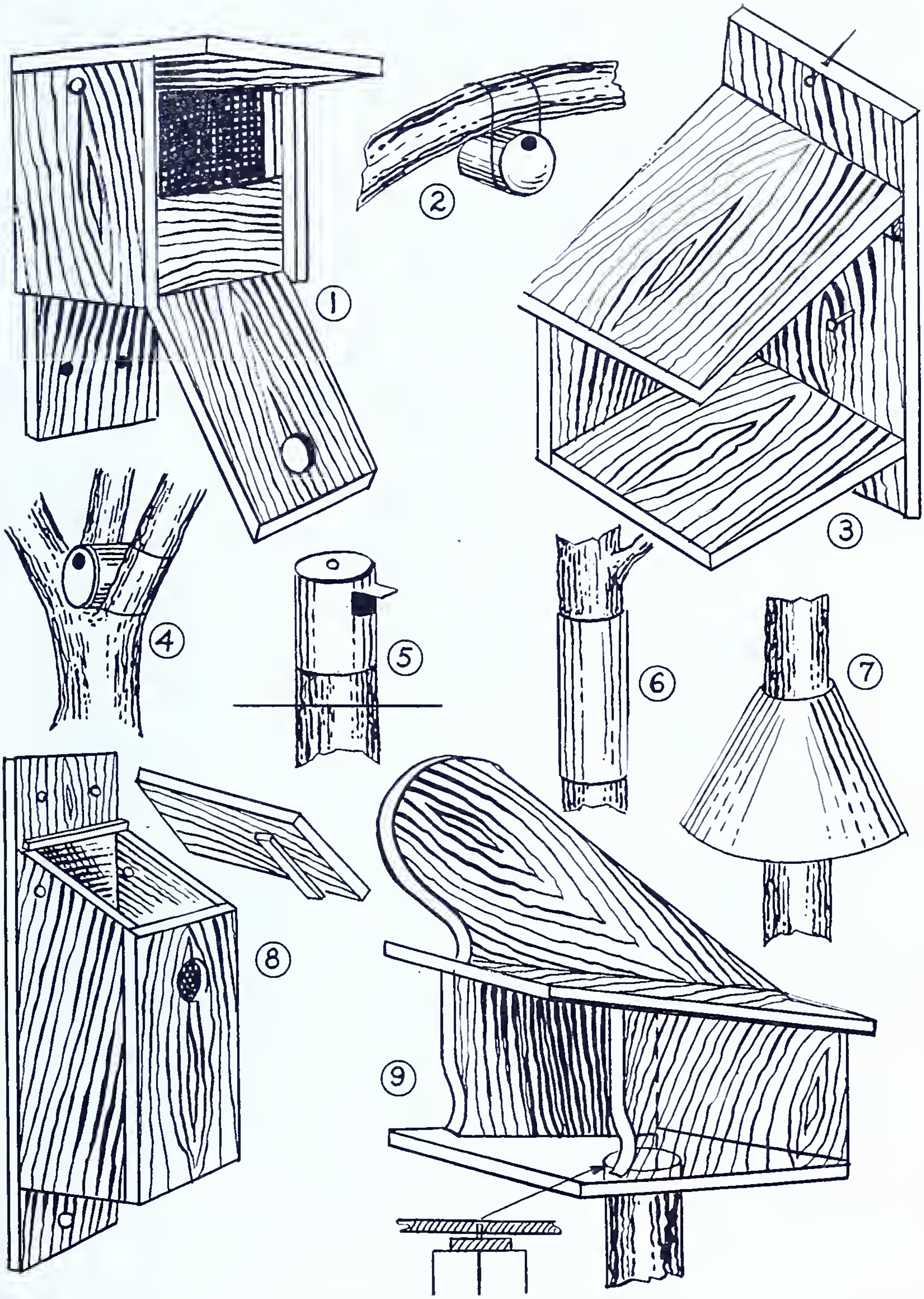


Fig. 1. This type box, hinged at the bottom, is very easy to clean out. Figs. 2, 4 and 5. Tin cans conveniently placed often attract wrens. Fig. 3. This outdoor shelf can be used either as a nesting platform or as a feeding counter, preferably the latter. Figs. 6 and 7. Tree guards prevent cats from climbing to the nest box. Fig. 8. A box with a removable top has many advantages. Fig. 9. Weather vane feeding shelf.

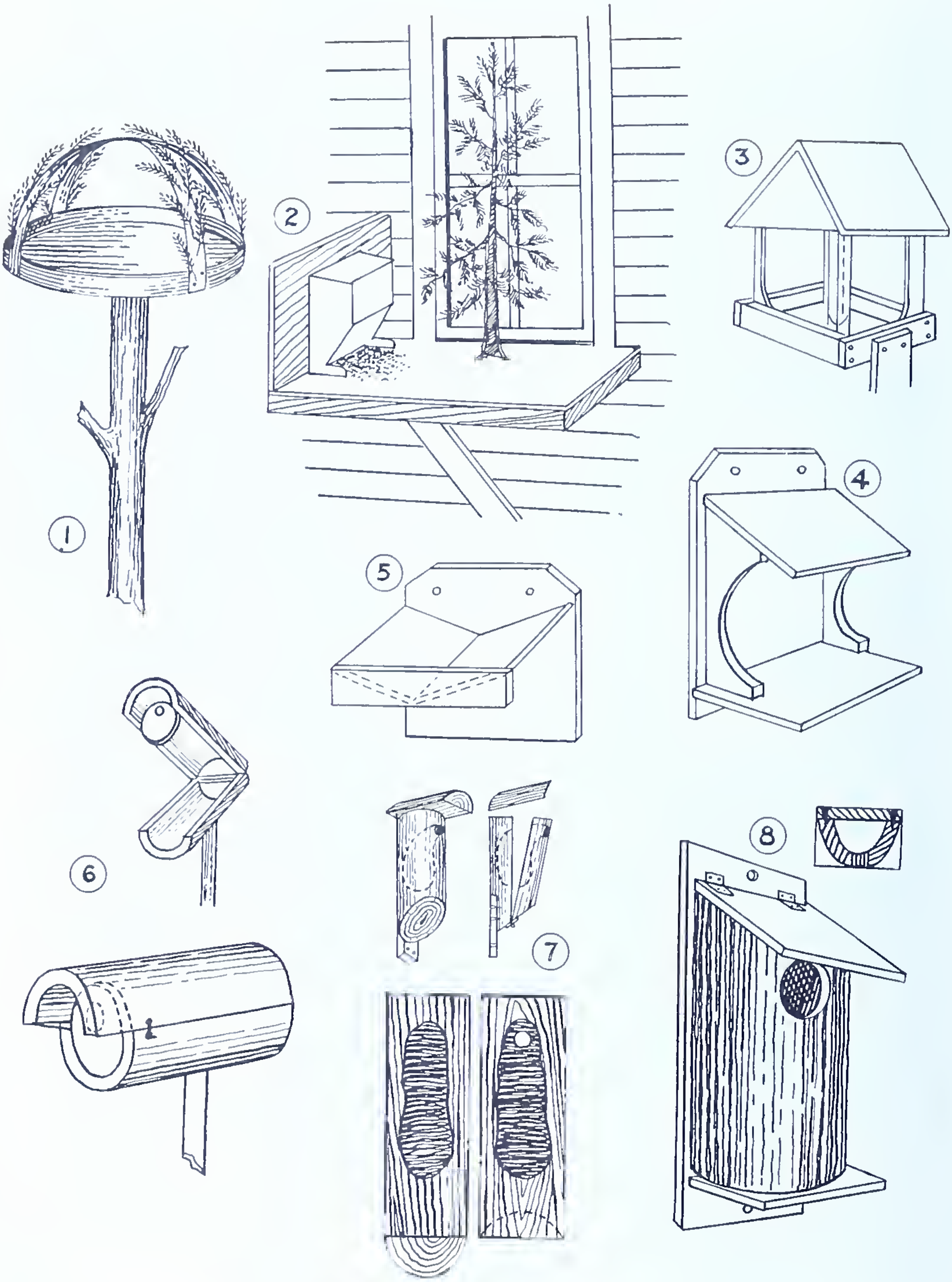
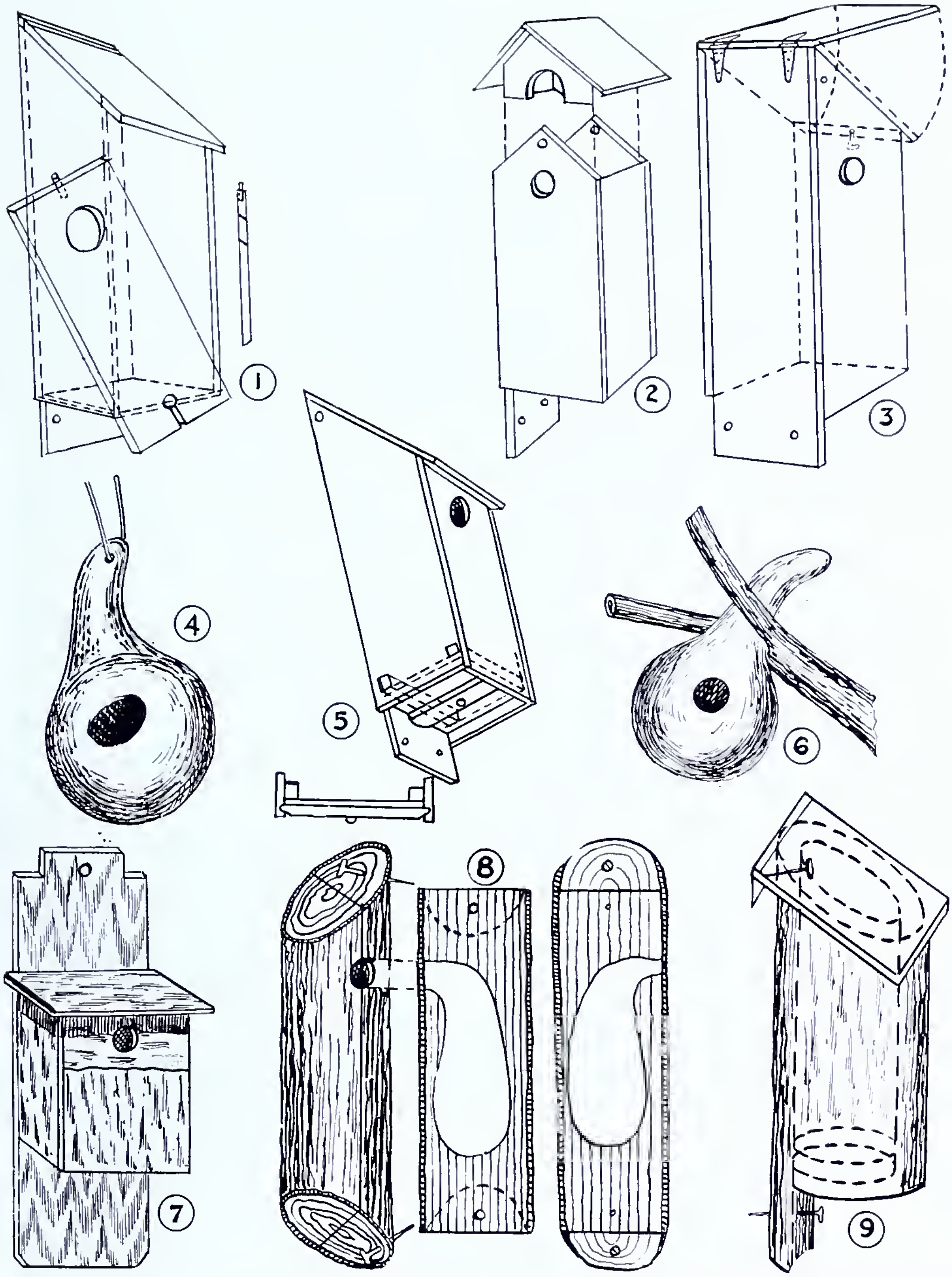


Fig. 1. Food tray. Fig. 2. Windowsill feeding counter. Figs. 3, 4 and 5. Feeding shelves; sometimes, if all sides are open as in Fig. 3, robins will nest in them. Fig. 6. This cleverly devised nest box is practical from many standpoints. Fig. 7. A dead limb sawed off, cut in half lengthwise and hollowed out part way on each side makes a good box for cavity nestors. Fig. 8. A rustic, hinged top box is also desirable.



Figs. 1, 2, 3 and 5. Here are some other examples of removable fronts, tops, bottoms, etc., any one of which is decidedly advantageous. **Figs. 4 and 6.** Gourds make especially good homes for wrens and martins. **Fig. 7.** Rustic box for bluebirds or wrens. **Figs. 8 and 9.** Rustic flicker boxes.

There are definite specifications for building practical homes for birds just as there are well-designed plans for erecting the houses in which we live, and if we want birds about us we must purchase homes for them built to those specifications, or, failing in that direction, build them ourselves.

Whether bird houses are bought or built, certain very important things must be borne in mind—things the amateur bird lover would never think about under ordinary circumstances.

For instance, the least pretentious bird box is usually the best seller as far as the birds are concerned. Do not select a highly bedecked, ornate affair; or one that is brilliantly colored. Instead choose a plain, well-constructed box, painted in a modest tone such as a dull green, gray or brown. If the entire make-up of a box is subdued to permit it to blend easily into the surrounding landscape, it will provide a more natural home for bird friends.

Homes for Purple Martins, on the other band, can be more pretentious—in fact, even elaborate. Often they are painted white to reflect heat.

Never buy or build a bird house which you cannot easily clean out. One that has a detachable bottom, usually hinged, or one that can be released by the slightest turn of a cleat is preferable. It can be easily dropped, and, presto, your nest box is ready for another season.

The roof of the home is also important. To make it rainproof it should be heavily painted or covered with some waterproof material. Sloping roofs are preferable, also the sides of the box should extend unhindered beyond the bottom of the box to allow the water to drain off at all times. If the bottom of the box extends beyond the sides, then it will form a base on which some water will invariably lie, or freeze in the crack between the bottom and the sides and force them apart. It is a wise plan also to bore a few small holes in the bottom of the box to allow any water to drain off which might find its way inside.

Serious thought should be given to the proper erection of bird houses so they will not be subject to intense heat or cold. Furthermore, boxes should have ample ventilation; however, this can easily be provided by boring one or two small holes through the sides, about an inch or so from the top. The matter of ventilation should be given special consideration in the construction of colony houses, such as are used for Martins.

Rough lumber is usually preferred in bird house construction, especially for the interior walls, as the rough surface materially aids young birds in climbing to the entrance.

It is not necessary to build porches or erect perches on the bird houses, for they are not essential. It must be remembered, however, that some birds prefer one or all sides of their nest box open; for instance, one side or more should be left open for the Robin, the Barn Swallow and the Phoebe.

Care of Bird Houses

Bird houses should be kept clean at all times, especially just before the nesting season. Sprays are sometimes necessary if bird lice, bird flies or fleas are prevalent. These external parasites are not harmful, but they are decidedly annoying. However, houses infested with the larvæ of certain flesh flies should be attended to carefully, for these pests often cause considerable mortality. Liberal applications of derris or pyrethrum powder are highly recommended.

A little of the powder sprayed on the feathers of the young will help materially, and in cases where the larvæ are discovered in time they can be removed and the wound treated with a mild antiseptic.

After the birds leave, clean the box thoroughly, burn all the debris, and spray the inside with creosol to make sure you destroy any pests which may have been overlooked.

From the time your boxes are placed until occupied by some feathered tenant, look them over carefully from time to time to see that no unwanted tenants try to take first lease on them. Mice, and sometimes flying squirrels, will be attracted to a nest box. I recall one box particularly which held mice, flying squirrels and Flickers all in one season.

Certain moths may form their cocoons in the box, and wasps and bees may honeycomb it. Watch out for all these things so that the home will always be tenable for the creatures you are so eager to attract.

Join a Bird Club

All persons interested in bird study should join an association organized for bird protection and nature study. They will not only increase their knowledge of their feathered friends, but establish fine personal friendships with persons interested in the same cause.

Dimensions for Bird Boxes

Species	Floor of Cavity INCHES	Depth of Cavity INCHES	Entrance Above Floor INCHES	Diameter of Entrance	Height Above Ground FEET
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House Wren	4 x 4	6-8	1-6	1	6-10
Crested Flycatcher	6 x 6	8-10	6-8	2	8-20
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(*) One or more sides open.

Local communities might well call upon vocational schools to build bird houses as a part of their manual training prior to Bird and Arbor Day.

All birds are protected in Pennsylvania, except the blue jay, the English Sparrow, the European Starling, the Kingfisher, the Goshawk, the Sharpshinned Hawk, the Cooper's Hawk, the Great Horned Owl, the Snowy Owl, and the Crow. Under no circumstances may the protected species, their nests or eggs be disturbed. Practice conservation by reporting illegal shooting to Game Commission officers, or if it happens to be in city or borough limits, to the local police.

Protect birds in their nests from winged predators, cats, and other enemies by providing plenty of cover for them.

Caring for Birds in Winter

A great many of our birds are all-year residents, and some others are winter visitors. Somehow it seems natural to think of aiding birds in the winter. It is at this period when natural food is scarce, or not available at all. A good many birds will stay in the vicinity all winter if some one takes an interest in them. The presence of a cardinal in the neighborhood will repay many times the efforts put forth in its behalf. If a wide variety of food is used all winter, bird visitors or residents will fare very well indeed. At the feeding counter during winter the foods listed below will be appreciated. Two feeding devices are better than one. The larger and stronger birds often drive away the smaller and weaker ones, perhaps at the very time they need food most.

Grit should be present at all feeding stations, although it is eaten principally by game species. It may take the form of broken shell, coarse sand, or other hard material.

Native grains, cracked corn, scratch feed, wheat, buckwheat, millet, or other native grains are desirable both on the feeding shelf or on the ground.

Sunflower seed is enjoyed by Goldfinches, Purple Finches, and members of the Sparrow tribe. It may be put out loosely, with other grains, but it is especially acceptable if left in the head, which may be nailed or wired to a tree trunk or branch.

Nut meats, such as cracked walnuts, hickory nuts, and others, are highly prized by Woodpeckers, Chickadees, Carolina Wrens and Tufted Titmice. Do not extract the meats of the nuts, but let the birds do this themselves. Peanuts (unsalted and preferably unroasted) may be used.

Beef suet is a wonderful winter food, appreciated by many species of birds. It may be fastened to a tree or placed in a secure open-meshed wire container. The birds will pick at the food through the wire mesh. Butcher shops often have meat scraps which can be obtained for the asking.

Fresh cocoanut, with part of the shell removed, is good. Half a cocoanut shell suspended by wires from a tree branch also makes a very good feeding receptacle.

A great many other winter foods have been used successfully. Some of these items are green vegetables, apples, hard-boiled eggs, broken-up sweet cookies, fresh boiled potatoes, bread crumbs, table scraps and pieces of doughnut.

A Christmas tree for the birds is an attractive way of remembering them during cold weather. It can be the tree discarded after the holidays. Fasten to the tree strings of peanuts, suet, pieces of fresh cocoanut, or meat scraps.

Attractive feeding counters can be made for window sills by tacking light boards on the sill, which is usually too narrow by itself. Special feeding trays may be constructed and hung on the porch or on tree branches. Feeding stations should be in a sunny spot. Discarded packing cases have been used successfully. These should be laid on one side with the opening facing the house. Grains, seed, sand, etc., are put in it. If there are cats about, the opening should be covered with large-mesh poultry netting, through which the birds can pass, while the cat is kept out.

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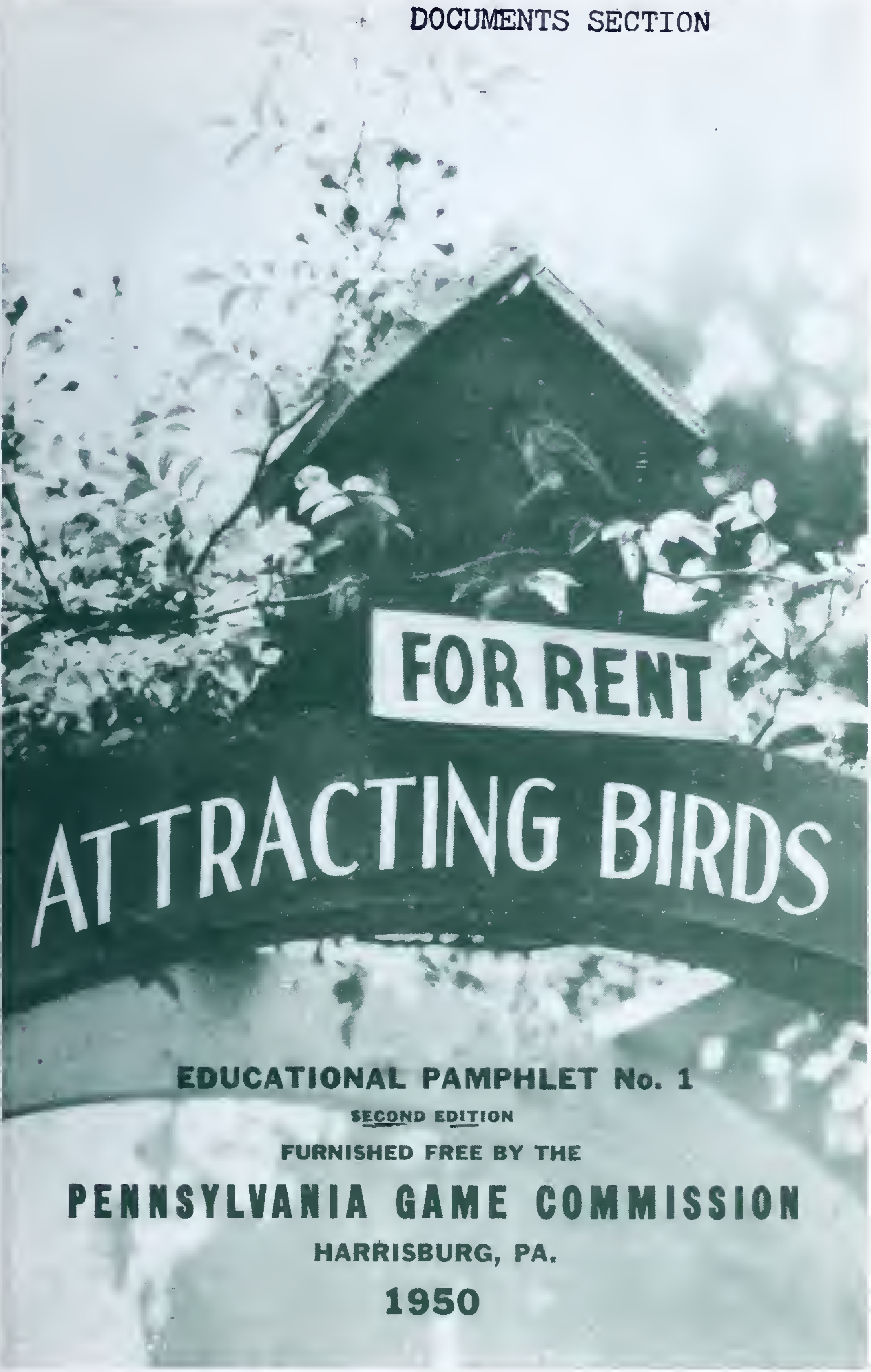

ATTRACTING BIRDS

EDUCATIONAL PAMPHLET No. 1

SECOND EDITION

FURNISHED FREE BY THE

PENNSYLVANIA GAME COMMISSION

HARRISBURG, PA.

1950

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This 72 page booklet contains more than 80 outstanding photographs and six color-plates depicting 124 species of Pennsylvania birds. It contains chapters on the value of birds, both economic and recreational; how to study birds, including home and field study, bird photography, bird banding, and bird clubs; how to attract birds, including bird house building, winter feeding, and planting of food and cover plants; and conservation of birds. One interesting chapter is devoted to bird facts and fallacies and a valuable check list of the birds of Pennsylvania, including permanent, summer, and winter residents. Finally, the publication lists thumb-nail sketches of fifty common Pennsylvania birds—short, informative descriptions of what they look like, the nests they build, when they are found in our State and where to look for them, and the songs they sing.

Every Pennsylvanian—school teacher, student, housewife, hunter, businessman, and bird watcher—should have a copy of this bulletin, which can be secured from the Commission at Harrisburg for only 50 cents a copy.

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"Attracting Birds"—by W. L. McAtee—U. S. Department of the Interior—Conservation Bulletin No. 1—price $.05.

"Some Common Birds Useful to the Farmer"—Conservation Bulletin No. 18—U. S. Department of the Interior—price $.10.

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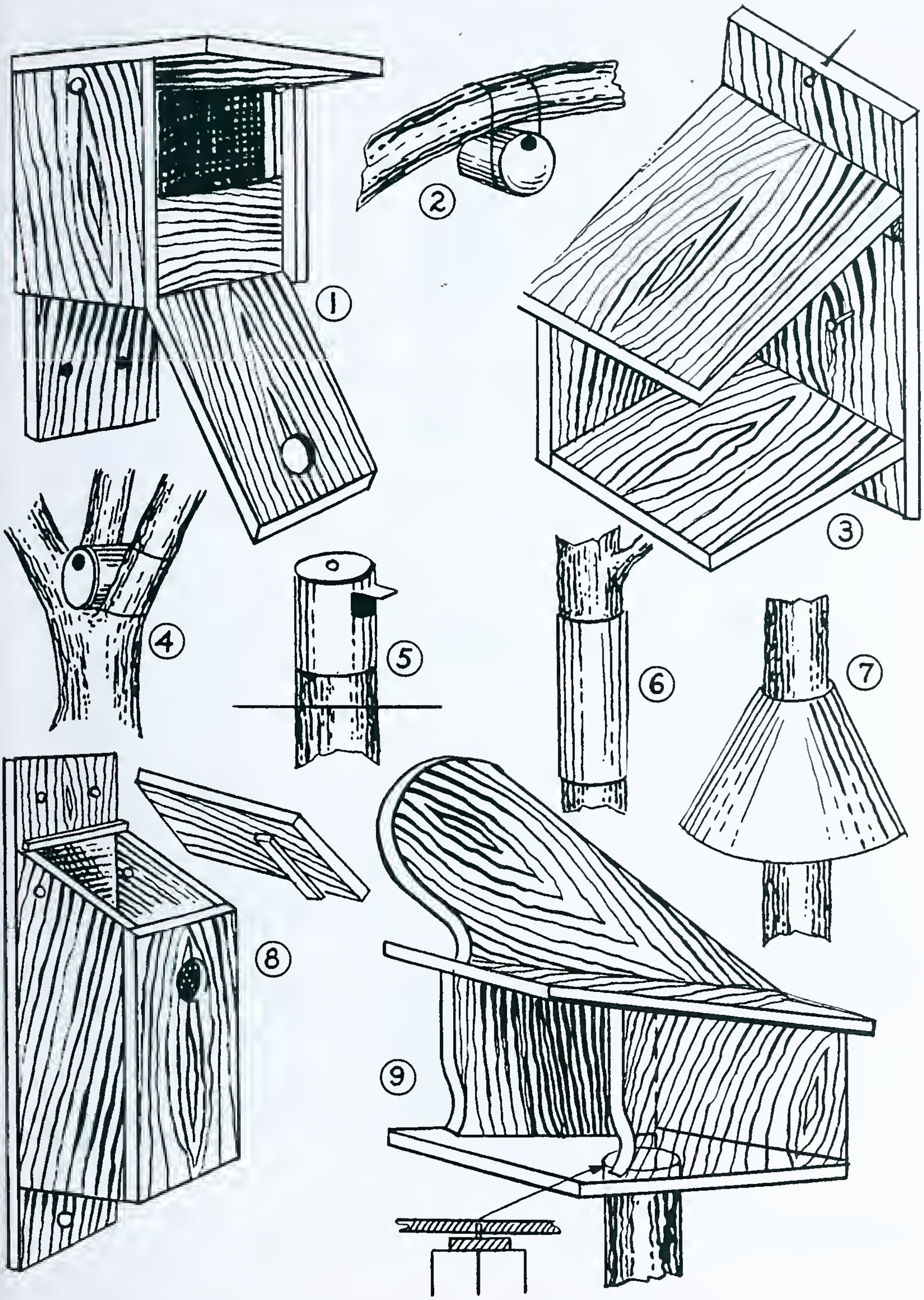
ABOUT THE COVER

The cover photograph on this leaflet was taken by Miss Pat Mckenrick of Ebensburg Cambria High School and was awarded first prize in a statewide conservation competition sponsored by the University of Pittsburgh's Pennsylvania Music and Forensic League and the Pennsylvania Game Commission.



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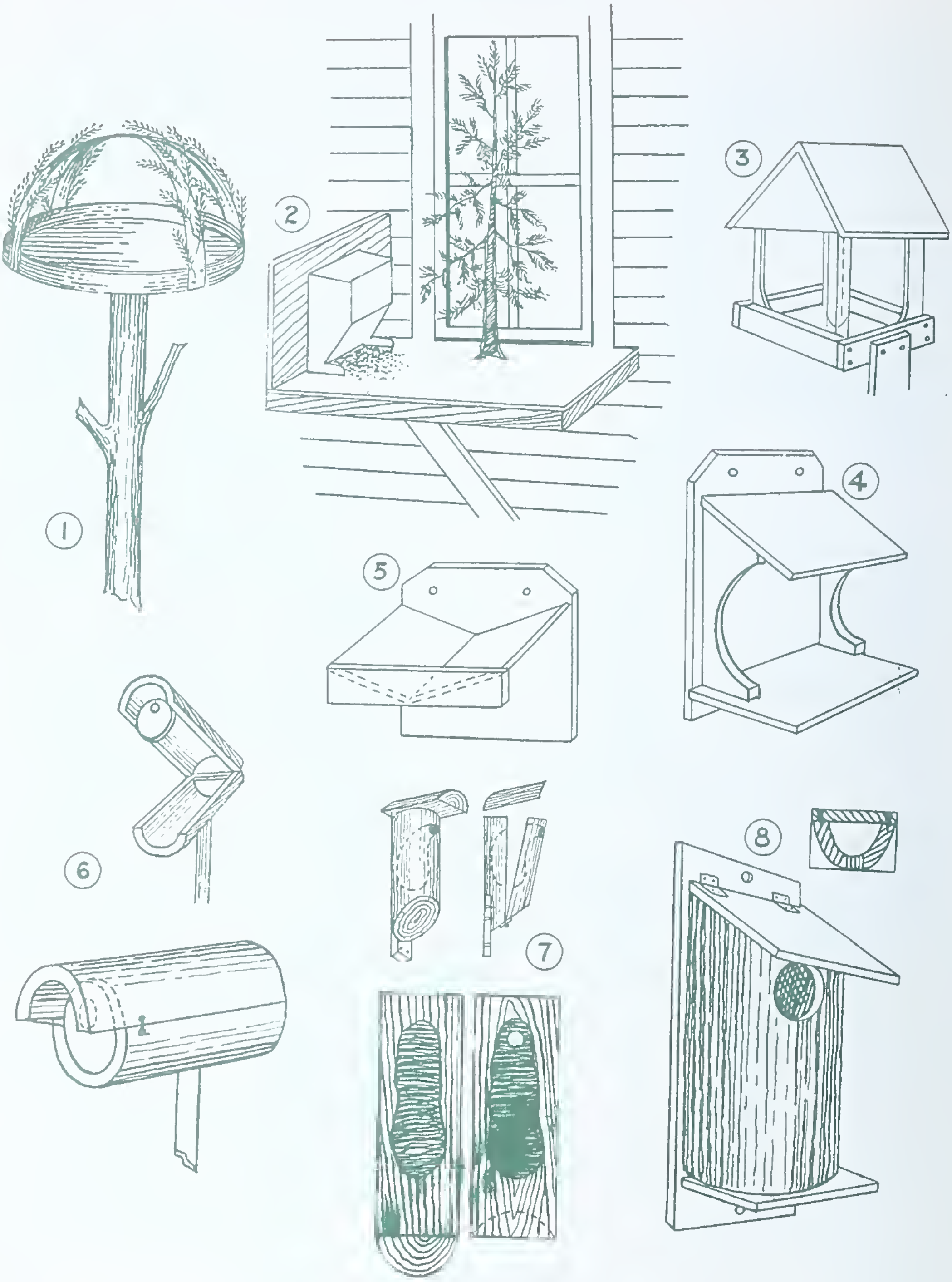

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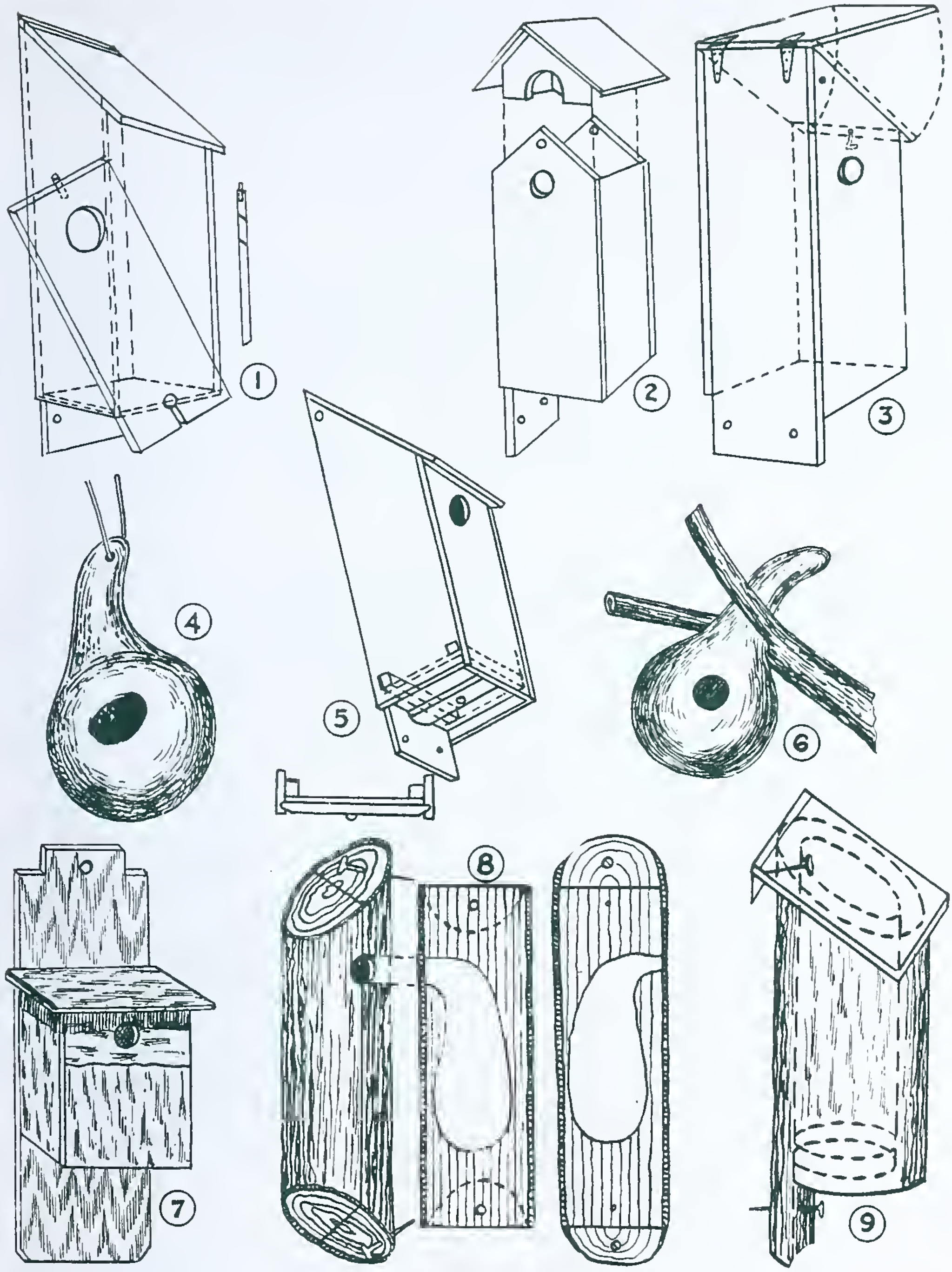

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3

THE BLACK BEAR
IN
PENNSYLVANIA

Photo by W. L. R. Drake

EDUCATIONAL PAMPHLET No. 3

Published by

THE PENNSYLVANIA GAME COMMISSION

Harrisburg, Pa.

1942

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THE BLACK BEAR IN PENNSYLVANIA

OF ALL that has been written about Pennsylvania's game, very little has been said about the black bear. Possibly this is because so few persons can intelligently associate such a creature with so thickly populated and industrial a commonwealth. Or perhaps Pennsylvania's white-tailed deer have been talked of so much that they are considered the only worth-while big game animals.

However, when they learn that in a single year more black bears were killed in Pennsylvania than in all the rest of the states combined, people begin to wonder. It hardly seems possible does it, especially since one tenth of the Nation's hunters are found in Pennsylvania? Yet this amazing record was established in 1924 and has since more than once been almost equaled.

It is not remarkable that Pennsylvania should harbor such a large population of bears. Of the twelve million or more acres of forest land in the state, much is the finest bear country that can be found. Vast ridges, marvelous in their wild beauty and ruggedness, offer many a haven for bruin.

The coming of the white man spelled disaster not only for the bear but for other wildlife as well. Man needed game for food, but at first he killed only what he could actually use. As communities developed, however, he sensed more profitable outlets for the creatures that he killed. Accordingly, his greed grew and grew until he even had the Indian kill for him by offering desirable articles in exchange for game. The gun took the place of the bow and arrow. Towns grew, markets were established, and game came to be regarded as a staple product to be bought and sold along with grain and vegetables.

As the white man pushed westward the Indians disappeared, and with them much of the game. In 1895, when the Game Commission was established, black bears were very rare in Pennsylvania. Nevertheless they were accorded no protection until 1905, when a closed season was established and shooting permitted only from October 1 to March 1. Thus Pennsylvania was the first state to enact legislation protecting black bears and this wise action probably accounts for the bear sport of today. Besides including them on the protected list of game animals, the same Act also provided for killing them when destroying personal property or attacking human beings. The penalty for killing a bear contrary to that Act was $50.

The same law is in force at the present time. There is also a law prohibiting the taking of bears through the use of any vehicle or artificial light, violation of which is punishable by a fine of $100. In addition, all equipment including cars or trailers, used in conjunction with the illegal killing of game by artificial light may be confiscated.

One bad feature permitted under the law of 1905 was the use of the steel trap and the deadfall, but in 1911 an act of the legislature abolished the use of both of these dangerous agencies. Not only were they deemed unnecessarily cruel devices for catching the animals, but on more than one occasion hunters were badly injured when they unknowingly stepped into a leadfall or large steel-jawed trap.

The law of 1909 reduced the length of the open season to three months; namely, October 1 to January 1. By 1912 bears had increased considerably and were beginning to be regarded by the hunter as creatures well worth pitting his skill against. He accordingly demanded additional protection for bruin and his tribe, with the result that the Legislature of 1915 reduced the open season to two months, October 15 to December 15, prohibited the use of log pens in taking bears and established a bag limit of one bear to each hunter. In 1917 a law was passed establishing a limit of three bears for each camp or hunting party.

By 1919 bears had increased to such an extent in some counties that numerous complaints of the destruction of sheep and beehives were heard. This resulted in the Legislature giving the Game Commission authority to provide special rules and regulations applying to the taking of bears, upon petition of two hundred citizens, in counties where conditions would warrant such action.

In 1921 a law was enacted prohibiting the use of any ammunition except single bullets in killing bears; it also reduced the season to one and a half months, November 1 to December 15.

Photo by W. J. Kitcher

Seldom are the highway travelers afforded a view of bruin.

As the years passed bears increased still more, and in 1923 the bag limit for camps and hunting parties was increased from three to four. In 1925 the open season was changed to November 10 to December 15; but in 1929, under the Commission's power to change seasons and bag limits, it was again changed to November 1 to December 15. The law of 1925 also provided that only bears over a year old could legally be taken. This regulation is still in force.

Proof of the increase of bears and their desirability as game animals can best be had by reviewing the annual bag of these creatures over a period of years as set forth in the table on page 8.

It can readily be seen from the figures in the table that the creatures have held their own. Of course, the kill varies considerably during certain seasons. Sometimes bad weather confronts the hunter for several days of the open season. Other times bruin is forced to hole up earlier than usual. Some years they are widely scattered because of the scarcity of food.

As the animals became too plentiful in certain sections they were live trapped and removed to more desirable locations. Through such restocking activities they again became common in sections where they had been exterminated forty years ago.

The black bear, contrary to popular opinion, attains quite a large size. Adult animals may weigh anywhere from 200 to 500 pounds, although few exceed 400 pounds. Authentic records cite the killing of a number which have weighed over 500 pounds, but these of course are in the minority. The largest bear on record in Pennsylvania weighed 533 pounds dressed. It was eight feet in length, measuring from tip of nose to tip of tail.

Bears were perhaps more of a nuisance in Pennsylvania during 1929 than in any other year. From the time the creatures emerged from hibernation until they holed up the following winter, the Game Commission received over two hundred claims for bear damage, which included the killing of 243 sheep and the destruction of 379 beehives and hundreds of pounds of honey. Under the law in Pennsylvania today, farmers can be reimbursed for such damages. An appropriation of $3,000 is set aside for the payment of such claims every year. The number of claims submitted, the number of animals involved and the amount paid since the bear damage law was passed are as follows:

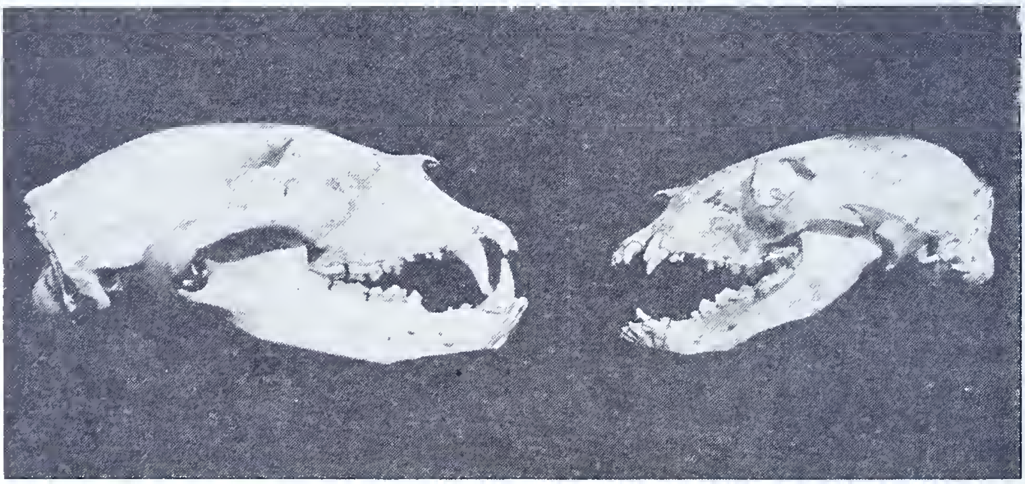

Photo by W. L. R. Drake

Left, skull of adult bear; right, skull of a cub.

BEAR DAMAGE CLAIMS, 1925-40 INCLUSIVE

	1925-26	1927-28	1929-30	1931-32	1933-34	1935-36	1937-38	1939-40
No. claims	72	137	197	161	58	116	86	100
No. Animals (also beehives)	320	395	602	561	144	342	203	322
Amount	$3,313.50	$4,739.54	$5,997.75	$5,353.46	$7,059.30	$2,568.94	$7,621.50	$1,647.57

The sheep-killing habit of some bears cannot be blamed on the tribe generally. It is purely an individual one. In some cases it may be brought about because of a scarcity of natural food, or by some farmer failing to bury the carcass of an animal which died. When a bear has acquired the sheep-killing habit, however, it must be killed.

During food shortages bears wander much in the open and occasionally come down into the towns near their woodland home where they cause much consternation. Black bears have never been known to attack or harm any one. However, reports such as the following are not infrequently received from field officers of the Commission:

"While at my desk one afternoon, taking care of some much neglected paper work, I answered the telephone to hear an excited woman's voice say, 'Is this you, Mr. Marsh? Well, two bears have my sons up an apple tree in the orchard. My God! What can I do, I'm here all alone!'

"I knew this woman's sons were in no danger as long as they stayed in the tree. So I said, 'If you have a gun and can shoot it, just fire a couple of shots which will scare the bears away. I will come over as quickly as possible.'

"To get to this particular farm I had to cover about five miles of rough road, very crooked and a 10 percent grade. I reached the home in about fifteen minutes and found the boys in the house. They told me the following story. In picking apples they had climbed a tree to shake down the remaining fruit. While thus employed, they were much surprised to see a small cub waddle under the tree and start eating the apples. They had quite a time throwing more apples to the cub, until an old bear joined in the free lunch. Then the boys' mother discovered the situation and you know the rest."

Within three blocks of the central part of Williamsport, one of the largest cities in the north-central part of the State, as many as six bears have been seen at one time. They come down out of the mountains to the outskirts of the city, where they ruin many fruit trees and upset many garbage cans.

In another county a farmer who stored his honey in the kitchen was awakened one night by a great racket. Upon investigation he found that three large bears had pushed the door open and were eating the honey. To get it, they had wrecked a lot of furniture and broken many dishes.

A school teacher living near a large town was horrified when she looked from her bedroom one night and saw a large bear sharpening its claws on a tree near the window.

At a farm in a neighboring county a farmer and his wife went to the fields to husk corn, but to their amazement discovered a large black bear calmly engaged in eating corn from one of the shocks. The bear scampered off when the farmer and his wife appeared. Later in the day a woman from the same vicinity, while returning from the store, was suddenly confronted by his bearship. She turned and ran. So did the bear, but in the opposite direction. You could not tell which was frightened more or which ran the faster.

Again, only a few miles from another large town a school teacher looked out of the window and discovered two large bears playing on the school lawn. When the pupils arrived, the creatures ambled leisurely away. Many other interesting and amusing incidents have occurred, too numerous to mention. The animals are harmless and never have been known to attack except in defense of their young or when badly wounded and cornered.

Not only are bears desirable in Pennsylvania because they furnish so much sport for the hunter annually; they are a decided attraction to the thousands of tourists who come into the Keystone State each year. There are hundreds of people who travel the highways through bear country in the hope of catching a glimpse of bruin in his natural surroundings. And sometimes they are rewarded.

Every now and then cinnamon bears, which are nothing more than a color phase of the black bear, have been killed in Pennsylvania, although for the most part these specimens have been taken within a very restricted area including parts of Potter, Clinton, and Lycoming Counties.

Photo by D. L. Batcheler

Cubs are very playful when young.

Bears see very poorly except at close range, but their senses of smell and hearing are very acute. The young, usually two, but not infrequently three and sometimes four, are born during the mother's hibernation. They weigh about a pound at birth and are blind and nearly naked. Their eyes open in about a month.

Black bears in Pennsylvania probably mate about July or August, the gestation period being about seven and a half months, according to some authorities. They eat a wide variety of foods including nuts, fruits, honey, berries, roots, grasses, ants, small birds and mammals, especially rodents; fish, frogs, eggs, carrion, etc. They can climb trees easily, balancing themselves perfectly on the most slender branches. They range widely and like to frequent clumps of beech trees in search of nuts. They hibernate in caves, under the shelter of large fallen trees, in shallow depressions, or even on the bare ground. When they emerge in the spring they are gaunt and hungry and are apt to include livestock in their menu if they get the opportunity.

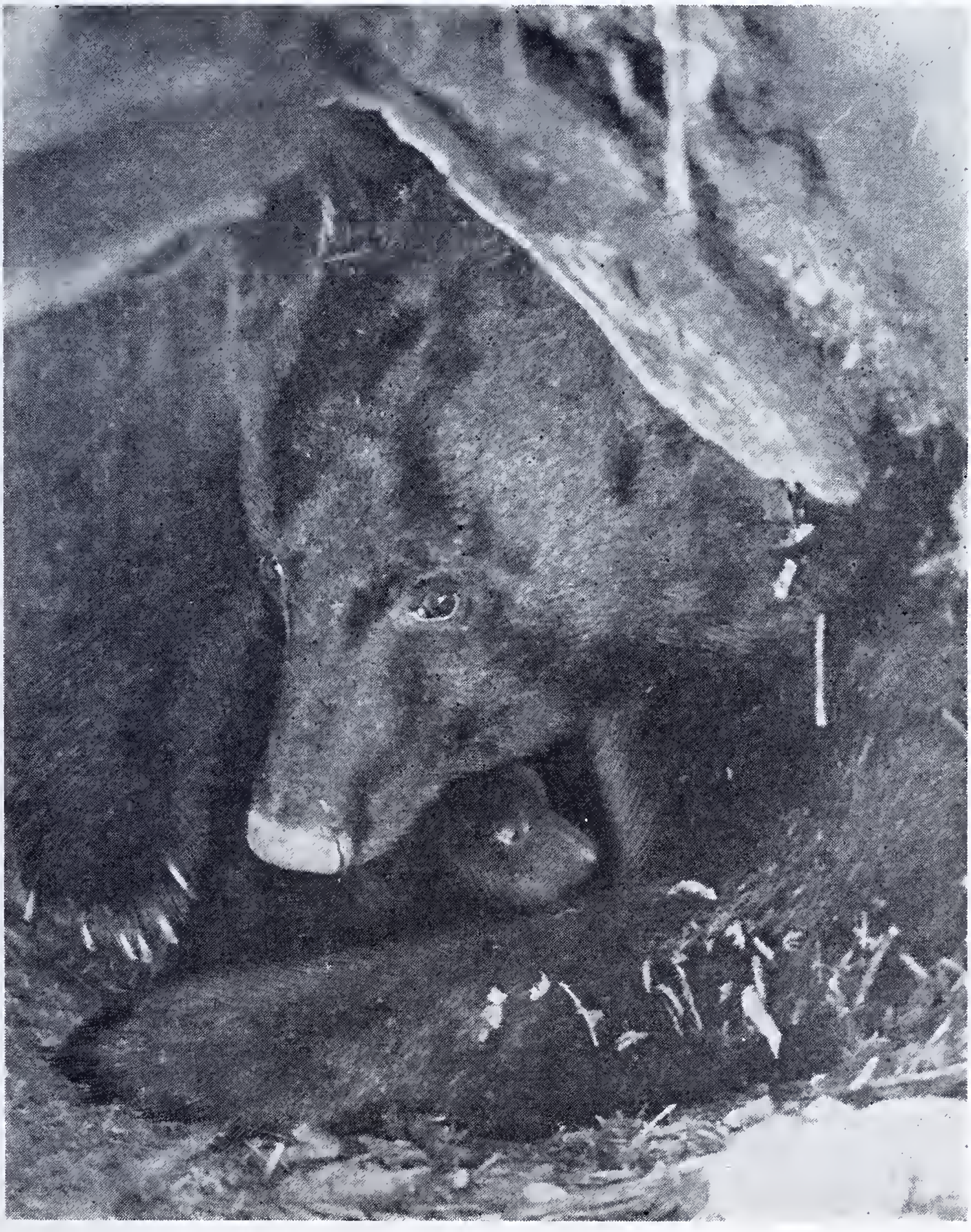

Photo by Pittsburgh Press

Bear in hibernation. Note cub in crook of forearm.

Pennsylvania will ever be proud of effecting the first legislation to protect black bears. Certainly these shy though sagacious creatures, so often called the "clowns of the woods," merit all the protection we can give them.

KILL OF BEARS		HUNTING ACCIDENTS		HUNTING LICENSES	
		Fatal	Non-Fatal	Res.	Non-Res.
1915	188	29	119	262,355	532
1916	435	30	102	290,422	662
1917	368	26	75	315,474	588
1918	387	19	48	311,290	478
1919	472	35	128	401,130	1,128
1920	420	43	85	432,240	1,725
1921	510	29	130	462,371	1,761
1922	563	37	125	473,735	2,120
1923	500	55	106	497,191	2,328
1924	929	38	131	501,572	2,558
1925	470	52	229	521,855	3,190
1926	660	47	197	520,574	3,468
1927	321	67	279	501,622	4,879
1928	427	45	238	437,727	1,190
1929	447	53	219	505,103	4,823
1930	707	59	291	530,390	6,005
1931	501	72	367	572,779	8,967
1932	216	54	275	537,451	5,252
1933	586	31	252	524,337	4,966
1934	(Closed)	28	254	568,666	6,024
1935	402	55	252	606,107	8,461
1936	356	23	159	534,830	7,122
1937	537	45	336	598,261	8,357
1938	384	50	438	654,146	7,584
1939	535	44	346	653,852	9,049
1940	524	43	419	666,420	12,748

SEASONS AND BAG LIMITS

1915	1 per season	October 15-December 15
1917	1 per season, 3 a camp	October 15-December 15
1919	1 per season, 3 a camp	October 15-December 15
1921	1 per season, 3 a camp	November 1-December 15
1923	1 per season, 4 a camp	November 1-December 15
1925	1 per season, 4 a camp (Cubs protected)	November 10-December 15
1927	1 per season, 4 a camp	November 16-December 15
1928	1 per season, 4 a camp (Thursday, Friday & Saturday of each week)	November 1-November 30
	(Six days a week)	December 1-December 15
1929	1 per season, 4 a camp	November 1-December 15
1930	1 per season, 4 a camp	November 1-December 15
1931	1 per season, 4 a camp	November 10-December 15
1932	1 per season, 3 a camp	November 10-November 30
1933	1 per season, 3 a camp	November 10-November 30
1934	No open season	
1935	1 per season, 1 a camp	December 5, 6, 7
1936	1 a day, 1 a season	November 23-November 26
1937	1 a day, 1 a season	November 15-November 20
1938	1 a day, 1 a season (Parties 2 a day, and 2 a season)	November 14-November 19
1939	1 a day, 1 a season (Parties 5 or more 2 a day, and 2 a season)	November 15-November 18
1940	1 a day, 1 a season (Parties 5 or more 2 a day, and 2 a season)	November 18-November 21

Note: In cases where the years are not listed, regulations for those years were the same as previous years.

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THE BEAVER IN PENNSYLVANIA

Photo by C. Gordon Krieble

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THE BEAVER IN PENNSYLVANIA

THE beaver had more to do with settling this country than the buffalo. They were sought eagerly for their fur by the early pioneers, and as their value increased hunters and trappers everywhere vied with one another in the traffic of their pelts. Trapping beavers became quite an industry and ranged into new territories rapidly; consequently many trading posts were established, and later, towns.

Those who have perused the annals of history know the thrilling story of the fur trade, and how agents of John Jacob Astor, the Hudson's Bay Company, and other trappers preceded even the prospectors for gold; in fact, they were among the first to traverse our wilderness. During those days beaver skins were used extensively in Europe in making top hats, and out of the urge to cater to that early-day fad grew a business so gigantic as to reach into almost every part of the North American continent.

Years passed, during which the beaver supply was drained almost to the point of extermination. Today, however, through restocking and protection they have increased in many parts of the country.

Beavers were once abundant in different sections of Pennsylvania. But they, too, disappeared with the advance of civilization. All that was left to tell the wonderful story of these famous animal engineers a half century ago were such familiar and suggestive names as Beaver Dam, Beaver Creek, Beaver Meadows, and Beaver County; and occasionally someone, while wandering through the wildest portions of the mountains, found the remains of their ancient dwelling places about streams and dams.

There seem to be but few records of any sort concerning the last known colony in the Commonwealth, and these do not agree. Mr. Abraham Neveling of Coalport, a well-informed naturalist of former years, once stated that "The last beaver was trapped in Clearfield County in 1837." Another old record tells us that one George K. Boak of Pine Glen claimed the animals were to be found in Centre County in 1867; and still another includes a statement from a Mr. Seth Nelson of Clinton County which goes on to say that the last beaver was killed on Pine Creek in 1884.

The Annual Report of the Game Commission for the year 1902 by Dr. Joseph Kalbfus, then Secretary of the Commission, reads: "We are reliably informed there is still a colony of beavers in the state; they are found in the wildest portion of a wild section. There is no possible way whereby harm can come to any individual or the state through their absolute protection. A sufficient increase in their numbers might result in benefit to the state, and we recommend a law protecting this animal in the Commonwealth."

The movement to protect the beaver was received favorably, for during the Legislature of 1903 a law was passed prohibiting the capture or killing of beavers, violation thereof entailing a penalty of $100.

There are no records at hand which make any reference to the beaver from 1902 to 1915. During that year a committee composed of members of the Wisconsin Legislature visited Pennsylvania to study methods of reforestation. That visit marked a new epoch for the beaver in Pennsylvania.

Some of the gentlemen referred to, while looking over certain forest lands in Potter County, pointed out that conditions were ideal for beavers. (At that time Wisconsin was giving beavers protection.) The seed they sowed found fertile soil, but it was not until 1917 that any definite restocking program was undertaken, and then only as an experiment. In the summer of 1917 a pair of beavers was presented the Game Commission by the state of Wisconsin and released in Game Refuge No. 17 near Sizerville, Cameron County, on what is known as East Cowley Run. They at once went to work and built a dam and house, and the following summer raised a family of young. In the spring of 1918 the young beavers moved to other locations on the same stream and built dams, and by the fall of 1919 the whole valley for a distance of nearly a mile was a series of dams, one above the other.

Photo by W. L. R. Drake

A typical beaver dam.

In September, 1919, a pair of these beavers located on Parker Run, about nine miles from the original dam, and the following summer reared young. At about the same time a pair located on Hunts Run, seven or eight miles in the opposite direction. They also built a dam and house, and the following summer raised young. In the spring of 1920 beaver cuttings were noticed on other streams in the locality, many miles distant from the home dams. One dam was found on the headwaters of Bailey Run. Examination of this dam and house revealed, however, that it was established in 1919. In the summer of 1922 a survey showed three well-established dams on Hunts Run, two on Bailey Run, two on Parker Run, and while trapping bears in McKean County during July, 1922, Harry VanCleve, former trapper of the Commission, found a dam with two adults and five young on the left branch of Potato Creek.

By this time all of the streams in southern McKean and most of Cameron Counties were well stocked with beavers—all believed to be the offspring of the original pair from Wisconsin.

During the summer of 1921, C. E. Logue, another former trapper for the Commission, caught three beavers at the original dam in Cowley Run. These were released near Woolrich in Clinton County where they located on Staver Run. There they increased to such an extent that they built and occupied five or six dams on various nearby streams. This is as far as the offspring from the original pair were traceable as they hopelessly mixed with beavers subsequently purchased from Algonquin Park, Canada.

There is no question concerning the authenticity of the above records. There are few persons, indeed, who had such an opportunity to study these splendid animals as had Messrs. VanCleve and Logue, and that they thoroughly carried on their observations is certainly evident.

Experiment with one single pair of beavers having borne more fruit than was ever hoped for, the Commission purchased four pairs from Canada in 1919, twenty-four pairs in 1920, and six pairs in 1922, all of which were liberated on game refuges through the state. In 1924 an additional twelve pairs were purchased in New York State and also released on refuge areas.

It is virtually impossible to follow the spread of the animals after 1920, although every new colony was plotted on a special map in the offices of the Commission. This map was followed with much interest, and their occurrences in new regions were watched with the eagerness of a general and his staff noting the advance of an army into hostile territory.

The beavers, fortunately, had few obstacles to confront. Man harmed them hardly at all, and only a small number of prosecutions for molesting or killing them were brought since they were first given protection in 1903.

On March 19, 1929, a beaver was killed in a garden in the town of Collomsville, Lycoming County, several miles from any colony. The person who killed it stated that he did not know what kind of an animal it was.

Mr. VanCleve cites one specific instance of the killing of a pair of the animals by a bear, which located them in a burrow underneath two fallen hemlocks.

Like the many problems which followed the tremendous increase of deer and ringnecked pheasants in Pennsylvania, damage complaints also followed in the wake of the ever-growing number of beavers. This called for prompt action on the part of the Commission. Complaints usually referred to damage to commercially valuable trees on private property, burrowing under fields, flooding valuable lands and important roads, appropriating water-supply reservoirs as homes, retarding the operation of mills, and other forms of depredation or nuisance. In one case a beaver made his home under the framework of an old splash dam, using the natural pool below the dam for a bathtub. This animal grew accustomed to the many people who came to see him, and perhaps no other single animal had its picture taken as often as he.

At another time the beavers put the Cumberland Valley telephone lines out of commission for about twenty-four hours. They cut off two stout trees four and five inches in diameter which stood on a bank, their tops higher than the telephone wires. When the trees fell, they dropped on the wires and interrupted service from Sunday morning until Monday morning.

In still another instance the animals built a dam on the stream that supplies Philipsburg, Clearfield County, with water. The dam was blasted out with dynamite, but the animals built another, and again it was blown up. When the beavers constructed a third dam, it was decided to trap them.

Because of all these things, it was necessary, and is still necessary in many places for that matter, to live trap the animals and release them in other sections. Hundreds of them have already been trapped. This method of removing the creatures, while effective, is necessarily slow.

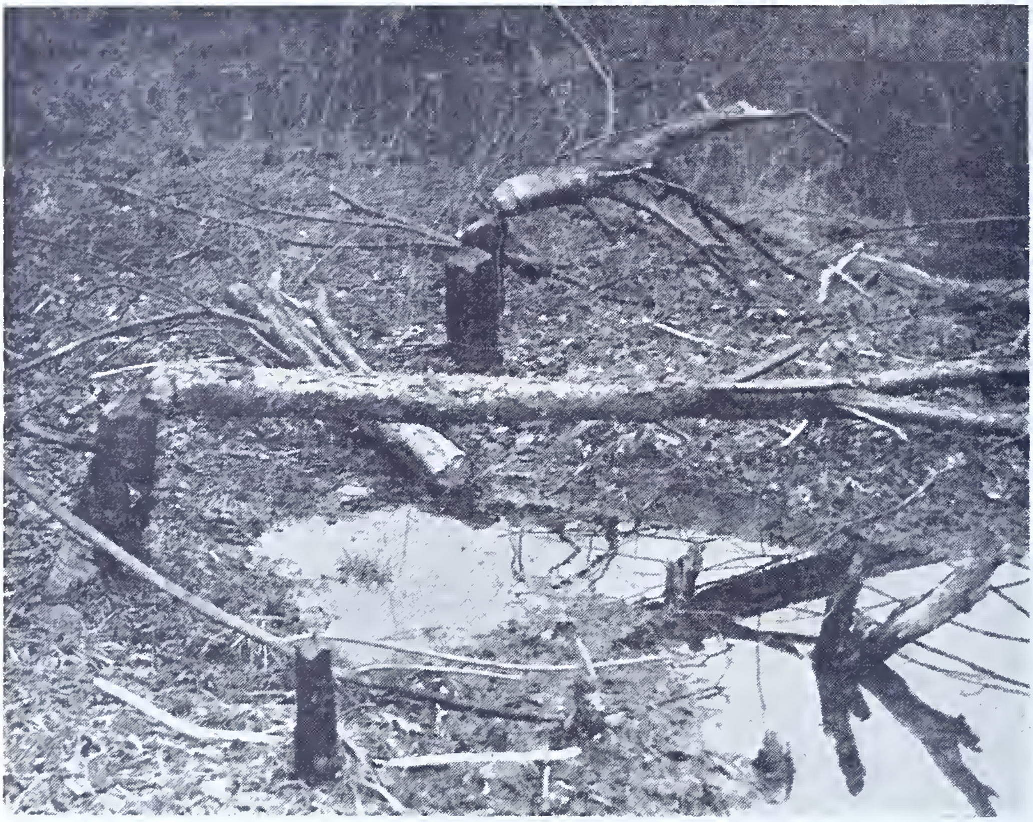
Photo by Deck Lane

Live trapping is sometimes necessary.

However, it is perfectly harmless. For example: A large female beaver caught during the summer of 1930 produced six living young the day following, an indication that the trap causes no injury to the creatures. Incidentally, the six young beavers were brought to the Harrisburg office of the Commission, where they crawled about the floors for a while, causing much excitement and interest among the employees. They weighed only about a pound apiece, their eyes were open and the teeth of their lower jaws were almost fully formed.

Despite live trapping operations, beavers continued to increase so steadily, with a corresponding increase in damage complaints, that the Commission decided to permit sportsmen to harvest the surplus from time to time. In this way the creatures would be kept well under control and the trapper would receive some monetary reward for his efforts through the sale of the pelts.

Accordingly, the first open beaver trapping season in Pennsylvania was declared state-wide in 1934, from March 1 to April 10. Regulations



Beaver cuttings. *Photo by W. L. R. Drake*

provided that the animals could be taken by trap only and not shot, that one individual could not set more than ten traps, that he could not take more than six beavers, and that within ten days afterwards the pelts had to be taken before the Game Protector of the County in which they were caught to be stamped and sealed before the fortunate individual was permitted to sell them legally.

During that year 6,455 beavers were taken in 50 of the 67 counties. No season was declared in 1935, but in 1936 another state-wide season was established between March 16 and March 31, when 2,261 beavers were taken in 49 of the 67 counties. Another state-wide season was declared in 1927 from March 1 to March 15, at which time 1,222 animals were taken in 50 of the 67 counties. In 1938 the season was limited to 18 counties only from February 15 to February 28, during which time 541 beavers were taken. In 1939 the open counties were limited to 8, from February 15 to February 28, during which 353 were taken. Twenty counties were open in 1940 from January 15 to January 31, when 703 beavers were taken in 19 counties. In 1941 forty counties were open from March 1 to March 15, and a total of 1,195 animals were removed from 28 counties. All in all, a total of 12,730 beavers have been trapped since 1934, having an estimated fur value of approximately twelve dollars per pelt, or $152,760.

There is much yet to be learned about the habits of these interesting creatures. For instance, there have been differences of opinion among some authorities concerning the condition of young beavers when born. Some claim that the eyes are not open and that the creatures are helpless for several days. That the eyes are open and the lower teeth through at birth was substantiated by observing a pregnant female which had been caught in a trap and subsequently placed in a small pond near the home of a Game Protector for observation. The pond was enclosed with poultry wire. Within was built a house of pine boards, four feet square and four feet high with a nest box inside. The house was arranged with an under-water entrance and with a door at the back for making suitable observations.

During the early morning of May 8, 1926, six baby beavers were born, with the eyes open and two lower front teeth fully formed. The two upper front teeth had already started to protrude through the gums. On May 11 these little fellows weighed about a pound each and were observed at the entrance to the house.

Beavers exhibit a most remarkable engineering skill. Their dams and houses are undisputed monuments to their painstaking efforts. Dams that have been torn out by man because they interfered in some way or another with his plans have been rebuilt again and again. Beavers work chiefly at night, and the person who approaches a dam at eventide may catch a glimpse of some of the colony swimming about. Usually it is only a glimpse because they are easily frightened and an alert sentinel will slap the water with his tail as a signal for the colony to dive. The beaver's tail is broad, flat and hairless and is used as a rudder and propeller.

Beavers' houses of various sizes have been found and examined from time to time. These houses are built either along the bank or an island in the pond. With the erection of the dam the stream bank is submerged and the house is built upon an elevated portion of the bottom. For protection, the entrance to the house is always well beneath water-level. The nest is above water-level.

We have only one record of a three-story house being found, although a number of two-story dwellings have been located. This house was almost perfectly conical in shape, about twenty feet through at the surface of the water and eight feet high. Upon opening it, a nice roomy

A well-built beaver house.

compartment was found near the top, with a winding passage leading down more than half-way around the house into the first-floor compartment, and then to the water. There was a branch passage leading from this circular staircase into the second or middle compartment. The foundation of this house was also crisscrossed with burrows. Twelve beavers were living in this conical mass of sticks, roots, grasses and mud, all of which were trapped alive and removed to another location.

There have also been differences of opinion concerning the gestation period of beavers. Seton* gives it at three months, the mating season beginning about February and the young being born in late April or May. Young are anywhere from three to six in number, although the number observed about our colonies has usually been four or five.

In one pond with two houses an old female beaver was seen rising to the surface near one house with something in her mouth and swimming toward the second house, diving about ten feet from it. Coming back, she repeated the same tactics, and this time the observers noted that she was carrying a youngster in her mouth, holding it by the left side, apparently about the middle. The cries of the young could be heard in both houses until the mother had transported all of them to the second house.

The chief food of the beaver is aspen or poplar. Observations about dams have shown that they eat willows and certain varieties of birch, black alder, and wild cherry. When these are exhausted, they peel the bark of white oak, pine and hemlock. They have also been known to eat the fruit and bark of apple trees. However, for the most part, trees preferred by beavers are not commercially valuable.

The weight of adult beavers in Pennsylvania, based on animals which have been held in captivity, or trapped, has ranged anywhere from 40 to 60 pounds, although certain individuals have been known to attain a weight of 100 pounds or over in a wild state.

Beavers have teeth like those of other rodents. Their eyes are small and their sight apparently not good. Their hearing is keen, however, in spite of their small ears. Their front feet, armed with strong claws, are used in digging, combing their fur, moving sticks, mud and stones in constructing their dams and houses. The hind feet, which are webbed, are adapted for use in water. The second claw on the hind foot is double. It is presumed that this claw is for combing their fur and removing slivers from their teeth.

The beaver has musk sacs or castors which produce an oily, heavily scented substance called "castoreum," which is used in medicine and perfume; also as trap bait. Beavers are very cleanly and are easy to tame.

A network of canals are often built in order to float food and construction material from more distant places when it is scarce in the vicinity of the pond. Food is stored on the bottom of the pond where it is available when the pond is frozen over.

There is a surprisingly large number of tourists all over the United States who make it a point, while traveling through Pennsylvania, to visit beaver dams wherever they are easily accessible. These dams are properly posted so they will not be molested by curious individuals. We hope to have these interesting creatures with us always, and so long as they can be controlled properly they will be given protection.

* Lives of Game Animals.

THE RINGNECK PHEASANT
IN
PENNSYLVANIA

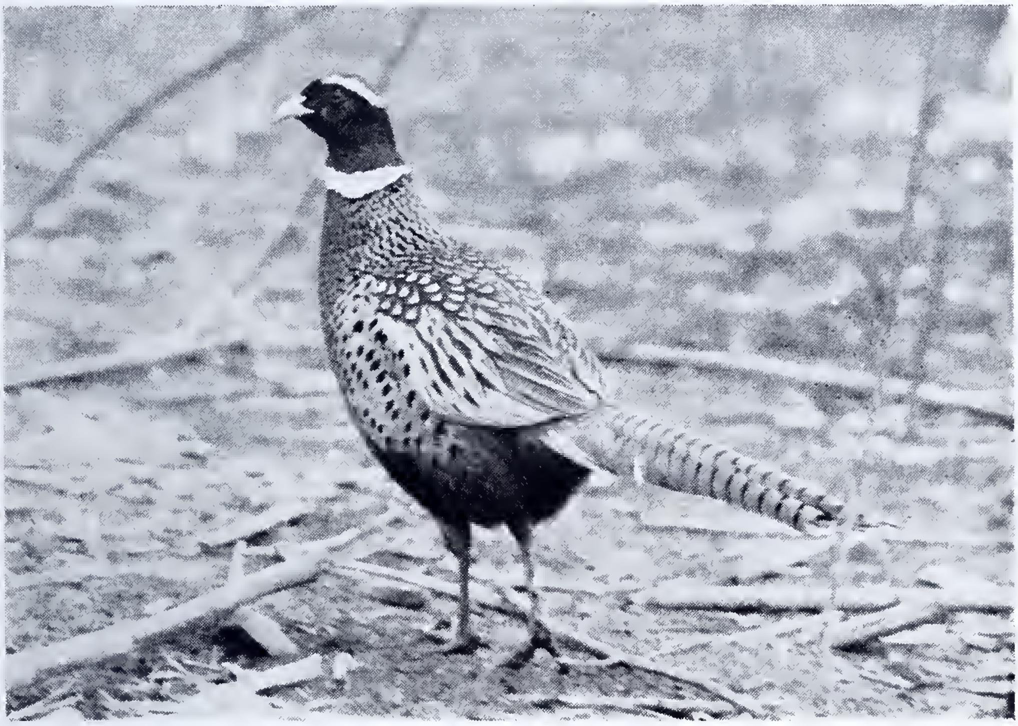


Photo by Leo A. Luttringer, Jr.

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THE RINGNECK PHEASANT IN PENNSYLVANIA

OF THE exotic game birds introduced into the United States, the Ringneck Pheasant is better known than any other because of its wide distribution and the ease with which it may be readily identified. The pheasant so common in the coverts of the United States is not what might be termed a pure pheasant, but is the result of cross breeding four true pheasants, namely; the Common Pheasant, the Japanese Pheasant, the Mongolian Pheasant, and the Chinese Pheasant.

The birds today found in our coverts have come both from England and Asia. Most of them are "mongrels," though a few are pure-bred individuals. Included among the latter there are, in addition to the races above mentioned, a few English Blacknecks and Melanistic Mutants. These two, like the Japanese or versi-color, lack the characteristic white neck ring of the more common forms.

The Ringneck Pheasant has had a remarkable history in Pennsylvania. A glance through various old records shows that it was classed as a game bird and hunted under regular open seasons since 1902. Apparently it was not very common in those early days, however, for other records show that comparatively few were released up until 1915, and then only by sportsmen and individuals who were interested in them chiefly for their own amusement.

The long open seasons and large bag limits in effect between 1902 and 1915, and the very limited stocking, were beyond doubt responsible for the lack of any substantial increase of pheasants during those years. Seasons at that time ranged anywhere from a month and a half to two months, and bag limits from fifty a season to unlimited. It is not surprising that the birds failed to gain a real foot-hold under such conditions.

The first effort to permanently establish the ringneck in Pennsylvania was made by the Game Commission in 1915, at which time 2,090 birds were purchased and released in several counties in the southeastern part of the State, which is ideal pheasant range. At the same time more sensible seasons and bag limits were effected. During the fall of that same year 896 pheasants were killed by the hunters, the number of hunting licenses issued during that season numbered 262,355. Even at this early stage of the game, hunters reported seeing pheasants in many counties adjoining those in which the original stock was liberated, proving that the birds had already begun to spread.

From 1915 to the present time, restocking of pheasants purchased in the open market has been done annually. Beginning in 1916, however, the Game Commission, by distributing several thousand pheasant eggs each year to game protectors, refuge keepers, and interested sportsmen and farmers, created another source of supply from which were released thousands of birds.

In order to note the amazing increase of pheasants during the first five years, one needs only to glance over the records of the Game Commission ending the year 1920. During that year 4,062 pheasants were released (twice as many as in 1915), 432,240 licenses were issued (133,268 more than in 1915), and 23,000 birds were killed, an increase of 22,204 over 1915.

A record of the kill by years since 1915, licenses issued, and seasons and bag limits follow:

KILL OF PHEASANTS		HUNTING ACCIDENTS		HUNTING LICENSES	
		Fatal	Non-Fatal	Res.	Non-Res.
1915	796	29	119	262,355	532
1916	1,253	30	102	290,422	662
1917	1,412	26	75	315,474	588
1918	2,969	19	48	311,290	478
1919	15,658	35	128	401,130	1,128
1920	23,000	43	85	432,240	1,725
1921	15,400	29	130	462,371	1,761
1922	20,000	37	125	473,735	2,120
1923	38,220	55	106	497,191	2,328
1924	45,876	38	131	501,572	2,558
1925	79,282	52	229	521,855	3,190
1926	93,635	47	197	520,574	3,468
1927	177,561	67	279	501,622	4,879
1928	143,239	45	238	437,727	1,190
1929	212,082	53	219	505,103	4,823
1930	251,362	59	291	530,390	6,005
1931	294,441	72	367	572,779	8,967
1932	246,551	54	275	537,451	5,252
1933	297,751	31	252	524,337	4,966
1934	243,599	28	254	568,666	6,024
1935	281,000	55	252	606,107	8,461
1936	267,890	23	159	534,830	7,122
1937	371,526	45	336	598,261	8,357
1938	517,280	50	438	654,146	7,584
1939	417,539	44	346	653,852	9,049
1940	459,071	43	419	666,420	12,748

SEASONS AND BAG LIMITS

1915	4 per day, 10 per week, 20 per season	October 15-November 30
1917	4 per day, 10 per season	October 20-November 30
1919	4 per day, 10 per season	October 20-November 30
1921	3 per day, 6 per season	November 1-November 30
1923	2 per day, 6 per season (male only)″	November 1-November 30
1925	2 per day, 6 per season	November 1-November 13
1927	2 per day, 6 per season	November 1-November 15
1928	2 per day, 6 per season (Thursday, Friday and Saturday of each week)	October 15-November 30
1929	2 per day, 6 per season	November 1-November 15
1930	2 per day, 6 per season	November 1-November 15
1931	2 per day, 6 per season	November 1-November 30
1932	2 per day, 6 per season (Tuesday & Wednesday of first week; Monday, Tuesday, Wednesday and Friday of second week; Thursday, Friday and Saturday of third and fourth weeks of November)	
1933	2 per day, 6 per season	November 1, 2, 6, 7, 10, 11, 16, 17, 18, 20, 21, 22, 27, 28, 29, 30
1934	2 per day, 6 per season	November 1, 2, 3, 5, 6, 7, 10, 12, 14, 17, 19, 21, 24, 26, 28, 29, 30
1935	2 per day, 10 per season	November 1-November 30
1936	2 per day, 8 per season	November 6-November 26
1937	2 per day, 8 per season	November 1-November 25
1938	2 per day, 10 per season	October 31-November 26
1939	2 per day, 12 per season	November 1-November 30
1940	2 per day, 12 per season	November 1-November 30

NOTE: In all cases where the years are not listed, regulations for those years were the same as previous years.

″ From 1923 to present only male ringnecks have been legal.

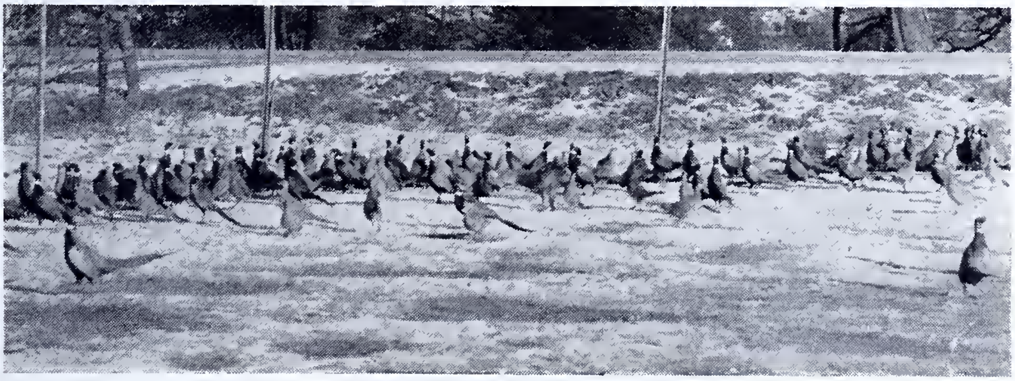

Photo by H. H. Schell

Ringnecks in holding pen.

From these records it can readily be seen that the birds not only gained a foot-hold, but greatly increased their own numbers, despite an annual increase in hunters, and the depletion of their ranks by predatory birds and animals, stray dogs and cats, and such farm implements as the reaper, mower, and hay-rake, which destroyed many nests. The use of the flushing bar, which is simply attached to either horse or tractor mower, saves many nesting birds and their eggs. It should be placed well in front of the knives so that chains or ropes suspended from it will flush the birds well ahead of the blades. Once a bird flushes the most practical thing to do is mow around the nest, leaving enough cover stand to give it ample protection.

The manner in which the farmer protected the pheasants from the start was unquestionably responsible for their gaining a foothold so rapidly. They wanted them around simply because they were beautiful to look upon, and at first apparently gave little thought to any economic attributes which the birds possessed. Many farmers posted their lands against hunting to protect them.

From 1920 on, a steady increase of the ringneck took place, and although during that period several reductions in the seasons and bag limits were made, more birds were killed each season. Up until 1923 it was permissible to kill both sexes. At that time, however, legislation was enacted permitting the killing of cock birds only, which later led to serious trouble in certain sections of the state.

Today the ringneck in Pennsylvania is as popular with the sportsmen as the ruffed grouse, wild turkey, and bob-white quail, and it has lessened the burden of shooting on these latter species to such an extent that they, too, have increased considerably.

The trouble first started in 1928 when it was learned from field officers of the Commission and interested sportsmen that the ratio of hens to cocks was far too excessive, and that the birds had increased to alarming proportions in some areas.

Investigations by officials of the Commission followed in the wake of these reports which were found to be only too true. In order to relieve conditions in the most seriously affected areas, some of the hens were trapped and shipped to other sections of the State. This was a slow process, however, and though it helped out, the situation was by no means remedied.

While officials were engaged in trapping pheasants from some of the over-populated areas, more fuel was added to the fire when several petitions were received from landowners in southeastern Pennsylvania demanding that certain counties be closed to the killing of ringnecks because stomach examinations of a number of the birds killed by automobiles indicated that they were consuming large numbers of the destructive Japanese Beetle. Subsequent investigations also proved this to be true.

In the early spring and summer of 1929 a number of complaints of pheasants pulling young corn were received, but an investigation revealed no serious damage, although in a few instances evidence of corn-pulling was noted. During the fall of 1929 many farmers who had previously complained of damage still persisted in posting their lands against hunting. However, despite the amount of posted lands, the greatest of all ringneck seasons resulted, the kill totalling 212,082 birds.

More trapping of pheasants in congested areas was done in the winter of 1929, and a trap originated by Mr. Warren Fretz, a former Game Protector, proved very successful. In one instance he trapped 106 pheasants on one farm.

During the summer of 1930 an unusual number of complaints were received from Southern Pennsylvania. A thorough investigation followed and a number of pheasants were killed in the cornfields of those landowners complaining of damage. The birds were not killed the moment they were observed, but in each case were watched carefully for some time in order to determine whether they were really feeding, or merely passing over the fields. All birds killed must certainly have fed at least a half hour before they were shot.

The most interesting crop and gizzard contents of which we have record was taken from a specimen killed by an automobile in Philadelphia County* in early June, 1930. It held forty-seven caterpillars, three earthworms, two potato bugs, one butterfly, one hundred and thirty-eight Thelia bugs, thirty-one alfalfa and clover leaves, three buttercup blossoms, one grasshopper, thirty-two wood worms, two spiders, and a lot of small weed seeds which were not identified.

Summing up the corn-pulling investigation it was learned that this depredation, when practiced at all, is only noticeable among the early plantings. At that time few insects are to be found and it is logical to assume the birds are searching for grubs and dormant insects. From

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* As many as 2,000 pheasants, principally hens, have been killed by automobiles in Lehigh County alone each year.

Photo by W. L. R. Drake

Pennsylvania food plot and cover mixture.

Photo by W. L. R. Drake

The end of a perfect day's hunt.

the moment insect life begins to assert itself, complaints of corn damage cease almost automatically.

When sufficient specimens were taken to satisfy the complainants and to warrant a fair comparison, the contents of the crops and gizzards were carefully examined and classified by responsible experts in that line of work. The results proved beyond all doubt that the ringneck is almost entirely beneficial, for the greater portion of material found proved to be species of beetles and grubs that are commonly known as enemies of corn along with the destructive Spotted Cucumber Beetle. Vegetable matter consisted of such material as Mouse-ear Chickweed, seeds of the Buttercup, Sage, and Wild Strawberry, several grains of oats, roots of the Nut Grass, leaves of the alfalfa and clover, and a number of unidentified weed seeds. In only one instance was corn found, but apparently this was watersoaked grain that had been scattered about the edges of cornfields (upon advice of the Game Commission) to discourage their pulling the young shoots.

In their desire to prove a case against the ringneck, the landowners overlooked the great number of crows, blackbirds, and mice which are invariably found in the cornfields, and which certainly do much damage.

The food habits of the ringneck pheasant have also been given considerable study during the past two or three years both by representatives of the Commission's Division of Propagation and Research and members of the Cooperative Wildlife Research Project at State College.

For instance, a survey of Lancaster County tomato fields made in 1939 during the month of August brought some interesting facts to light, namely: of the 45,710 tomatoes counted only 5.11% were damaged. Drought, which represented the most frequent type of damage, affected 2.19%. Only 88, or 0.19%, were damaged by birds of all kinds. Of particular significance are the statistics for the red tomatoes which in most cases were ready to be picked. Only 4,187 of these fruits were tallied, but 1,487 or 35.52% were damaged. Here again rot was the important factor with 59.5% of all damaged red tomatoes falling into this class, while only 4.0% were injured by birds.

Some farmers were inclined to blame birds for the rot observed, saying that this defect was really caused by bird picking. Other individuals, however, readily admitted that they knew rot was not caused by bird picking, when the fruits were small. The majority of the farmers were convinced after they made an actual inspection trip wherein true bird damage was pointed out that the loss due to birds was very small. Furthermore, a number of the men stated that they believed all birds, but particularly the pheasant, do more good by eating harmful insects than they do damage by picking at the tomatoes.

An examination of the crops of 423 pheasants made by the Cooperative Research Project in the fall of 1939 revealed 56 known species of vegetable foods and 6 groups of insects and other animals. Vegetable matter occurred 1055 times, animal matter was recorded 126 times and gravel occurred 69 times; 32 of the crops were empty. Corn was by the far the most important item taken at this season by the pheasants, fifty-four percent of the total volume of all crop content consisting of corn grain.

The chief food of the ringneck during winter is also corn, and the major source of this food is in the standing hand-picked corn field. When corn is hand-picked from three to five percent of the ears are left on the stalks. This waste grain is available when it is needed most, when the ground is covered with snow. Standing cornfields usually contain several other choice food producing plants which are eaten by the pheasants, such as lesser ragweed, yellow foxtail, smart weed, marigold and others.

There are certain points of general interest that have been brought to light in the study of the history of the ringneck pheasant in Pennsylvania. For instance, it is noted that the birds adapt themselves more readily to corn growing sections where the country is low and rolling with many creeks and considerable marsh areas. Small brushy areas along streamsides furnish ideal pheasant range.

It is also noted that the birds do not fare very well in large open valleys where agriculturists take pride in keeping their fence rows cleared of brush and other game cover. On the other hand, pheasants are often plentiful on old abandoned farm lands, adjacent to cultivated lands where upgrown fencerows, planted gullies and travel lanes provide the essential cover and food they need.

In releasing ringnecks for stocking purposes, only the most suitable areas are selected and the majority of the birds are released in the Spring. Game Protectors supervise such restocking and birds are released only after these men have studied the ground and considered it to be suitable range, with sufficient cover to offer food, and protection against predators.

In suitable environment, however, the question of predators is not so important because the birds can usually find havens of safety. Thick brush protects them from winged enemies and groundhog holes offer protection from larger wild and domestic predators such as dogs, foxes, etc. Pheasants are never stocked by the Game Commission on lands which are posted against hunting. The matter of restocking brings up a subject which is tremendously important—one which was purposely omitted until last so as not to detract from the reader's perspective of the ringneck's general history.

This subject concerns the matter of artificial propagation. The Commission first attempted to raise ringneck pheasants on several of its refuges, and satisfied with the success of the refuge keepers, inexperienced though they were, decided to establish several game farms for raising the birds on a larger scale. Two of these farms, the Fisher Farm at Schwenksville, Montgomery County, and the Jordan Game Farm near Harlansburg, Lawrence County, were established in 1929. Later the Loyalsock Game Farm was established in Lycoming County in 1934. The number of pheasants released since 1915 to date are listed in the following table:

Year	Ringneck Pheasants Stocked	Ringneck Pheasants Killed
1915-16	2,096	796
1916-17	1,370	1,253
1917-18	4,817	1,412
1918-19	6,003	2,969
1919-20	3,585	15,658
1920-21	4,082	23,000
1921-22	2,768	15,400
1922-23	3,836	20,000
1923-24	10,982	38,220
1924-25	8,525	45,867
1925-26	11,894	79,282
1926-27	7,152	93,635
1927-28	6,169	177,561
1928-29	6,058	143,239
1929-30	7,495	212,082
1930-31	15,205	251,362
1931-32	17,498	294,441
1932-33	12,981	246,551
1933-34	27,263	297,751
1934-35	50,005	243,599
1935-36	54,954	281,000
1936-37	47,637	267,890
1937-38	49,899	371,526
1938-39*	60,122	517,280
1939-40*	57,586	417,539
1940-41*	66,082	———

* Does not include trapped game.

In the past year the Fisher Farm was turned entirely into a quail propagation area, and the pheasant capacity of the Loyalsock Farm, which is particularly adapted to raising these birds, was increased. That the farms are definitely contributing much to pheasant shooting has been clearly demonstrated by the continued increase in the annual kill. Although native stock is generally plentiful throughout its range, which is chiefly southeastern and southwestern Pennsylvania, early spring restocking of birds raised on the State Game Farms or purchased in the open market seems to be necessary to replenish depleted areas and to provide an adequate properly balanced breeding stock.

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THE WHITE-TAILED DEER IN PENNSYLVANIA

Photo by Dr. C. S. Apgar

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THE WHITE-TAILED DEER IN PENNSYLVANIA

OUTSTANDING among Pennsylvania's game animals, ever since the inception of the Game Commission in 1896, has been the white-tailed deer. This nimble footed creature has become so abundant that Pennsylvania now holds an enviable position among big game states.

Whereas forty years ago deer were on the verge of extermination, today the appearance of one or more of them in any of our larger towns, or even larger cities, is not an uncommon occurrence. Four decades ago the sight of a deer was news. Today, in order to get a "headline" in the newspapers they must provide some sort of special entertainment, such as running through streets and jumping through house or store windows. Even these pranks are beginning to lack news value. Two deer bounded into one of our larger towns one day, tied up traffic for about fifteen minutes, then bounded out again. The incident was mentioned in an obscure page of the local paper.

The early history of Pennsylvania's deer herd is interesting. Having put a stop to market hunting, hunting with dogs, and shooting them at salt licks, all in 1897, and having enacted the famous "Buck Law" of 1907, the Commonwealth witnessed the return of this animal in increasing numbers. The "Buck Law," while principally designed to protect does, was finally passed as a protection to human life because the Legislature at that time was convinced that if a hunter was forced to determine the legality of his prey he would not shoot promiscuously.

To supplement the gradually increasing native animals the Commission also imported deer from other states, including Michigan, Maine, Vermont, North Carolina, Virginia and Ohio.

The first deer were stocked in 1906, when 50 were purchased from Michigan. Others were subsequently purchased in limited numbers each year afterwards until 1924, the number totalling 1,192 obtained from the following sources: 524 from Pennsylvania breeders, 417 from Michigan, 84 from New Hampshire, 64 from New Jersey, 50 from North Carolina, 21 from Maine, 16 from Ohio, and 16 from Kentucky. This additional breeding stock infused new blood into the herd. Most of these introduced animals, including those secured from Pennsylvania breeders, were Michigan stock—larger, hardier, and grayer colored than those found in Pennsylvania.

When the Commission noticed that the deer kill was gradually increasing from year to year, it determined to protect as many of the animals as it could. The deer season in 1907 extended from November 15 to December 1, and from 1907 to 1909, legal deer were those with visible antlers. In 1909 the wording of the law was changed somewhat and legal deer were defined as those with horns "visible above the hair." In 1913 the season was declared from November 10 to 25, and the law protected all deer except males with horns 2 inches above the hair.

One important factor which helped greatly, along with protective laws, to reestablish the herd was the cutting over of forest lands. Extensive lumbering operations provided the succulent sprout growth which created an ideal browse for deer.

Since 1915 the legal deer season, with few exceptions, has been from December 1 to 15, based on the fact that the breeding season of most of the animals is well over before the first of December. In 1921 all deer were protected except males with antlers 4 inches above the skull. In 1923, males with two or more points to an antler, and males with antlers 6 inches or longer were defined as legal; and after 1925 only male deer having two or more points to one antler were considered legal during a buck season.

In spite of these restrictions the kill of bucks constantly increased. The total kill in 1907 was very small, not over 300 animals having been taken. In 1915, only eight years later, 1,287 bucks were taken. In 1916, 1,732; in 1920, 3,300; in 1924, 7,778, and so on, the kill during later years just about doubling itself. During the early years the Commission was interested chiefly in building up a large breeding population and in popularizing buck hunting. Comparatively little attention was paid to the does, since they were obviously producing gratifyingly large numbers of fawns. However, about 1920, when the Commission began to receive complaints of considerable damage to crops and orchards, it suddenly realized that the deer herd, the doe herd in particular, was reaching vast and challenging proportions.

Authorities assert that the average life of a deer, in a relatively ideal habitat, is twenty years, and that a doe will produce fawns each year for about sixteen years of her life. If we remember, therefore, that by 1920 a large proportion of the does protected for the first time in 1907 were still alive, and that their progeny also had been producing its own offspring for several years, a little arithmetical computation will give us some idea as to the possible size of the doe herd.

Photo by W. L. R. Drake

Typical Pennsylvania deer country.

Female deer normally produce young annually. The first births, usually only one in number, most frequently occur about the time the does are two years of age. Under favorable conditions, a large percentage of the later births are multiple, numbering two or three fawns, in the aggregate approximately equally divided as to sex.

As the animals became more abundant, they were forced to extend their range; their food supply became scant; through proximity to highways and towns they became semi-domesticated; and by degrees deer damage became serious.

Quickly the problem of saving the herd changed to that of adequately controlling it. In 1920, when the animals first showed evidence of becoming abundant in certain regions of Pennsylvania, farmers and fruit growers were first to sound the alarm. They demanded relief; they suggested payment for damage. Many farmers asked the logical question: Has any group of men interested in recrea-

Photo by C. Gordon Krieble

As the herd increased it overran farm lands adjacent to its mountain home.

tion in Pennsylvania the right to impose upon the citizens of the State a system which will force any landowner to desert his farm because the damage of wild game is so extensive and costly?

After making careful investigations the Commission realized that while some deer damage was overestimated, many complaints were justified. It knew that something would have to be done to prove that the sportsman was interested in the farmer's problems and eager to help him solve them. In 1923 the Deer-Proof Fence Law was passed, which provided that 8-foot wire fencing would be furnished to landowners suffering damage, provided they would meet the cost of construction. A sum of $10,000 was thus set aside annually from the Game Fund for deer-proof fencing.

This law did not improve the situation much. Not many farmers could afford the fence, and often the very landowner who needed protection most could least afford it. Also the fencing of certain property meant that adjacent or nearby farms were subjected to even worse damage than before. In 1925 the law was clarified to permit landowners to furnish posts and erect the fence, the Commission to furnish the wire and staples. Even with this improvement, the law could not possibly remedy conditions very widely.

In 1923 a law was passed giving landowners the right to kill deer caught in the act of destroying property provided they dress the carcass and report the incident to the nearest game protector within twenty-four hours. In 1925 this law was changed to enable landowners in sections designated by the Commission where damage was acute, to retain the venison for food. In 1929 this legal provision was broadened to permit landowners throughout the entire State to kill and retain the creatures for food, provided the damage was sufficient to warrant such action.

Trapping deer for stocking elsewhere was also attempted as a relief measure. Several operations of this sort were carried on from 1919 to 1924, but only a few animals were caught, and the method was so tedious, laborious, and expensive that it could not be justified. Furthermore, there was considerable mortality among the animals during the trapping operations.

Many sportsmen were so adverse to any killing of does that the law passed in 1923 removing protection from does in sections where depredations were being committed, and necessitating a special license costing $5.00, met with little favor. With the 100 licenses issued in Washington and Quincy Townships, Franklin County, during a three-day special season in 1923, only eight does were killed. Many sportsmen bought licenses which they never used as an outward demonstration of their opposition.

In 1924 a total of 212 special licenses were issued for Brown and Menno Townships of Mifflin County, 49 legal and 7 illegal were killed, and 212 licenses were issued for Logan, West and Barree Townships of Huntingdon County, with only 77 legal and 9 illegal deer.

In 1925 licenses were issued and animals killed as follows: Adams County, 857 licenses, 89 legal and 4 illegal deer; Cumberland County, 983 licenses, 127 legal and 3 illegal deer; Franklin County, 778 licenses, 130 legal and 1 illegal deer; Huntingdon County, 1,493 licenses, 390 legal and 7 illegal deer; Mifflin County, 894 licenses, 167 legal and 7 illegal deer; and Perry County, 708 licenses, 126 legal and 1 illegal deer. A total of 10,650 licenses were offered; 5,513 were taken out by sportsmen, and 1,030 legal and 22 illegal deer were killed. In 1925, the Special Deer License Law was amended to reduce the license fee from $5.00 to $2.00.

In 1926 special licenses were issued and animals killed as follows: Clearfield County, 1,209 licenses, 354 legal and 14 illegal deer; Huntingdon County, 2,397

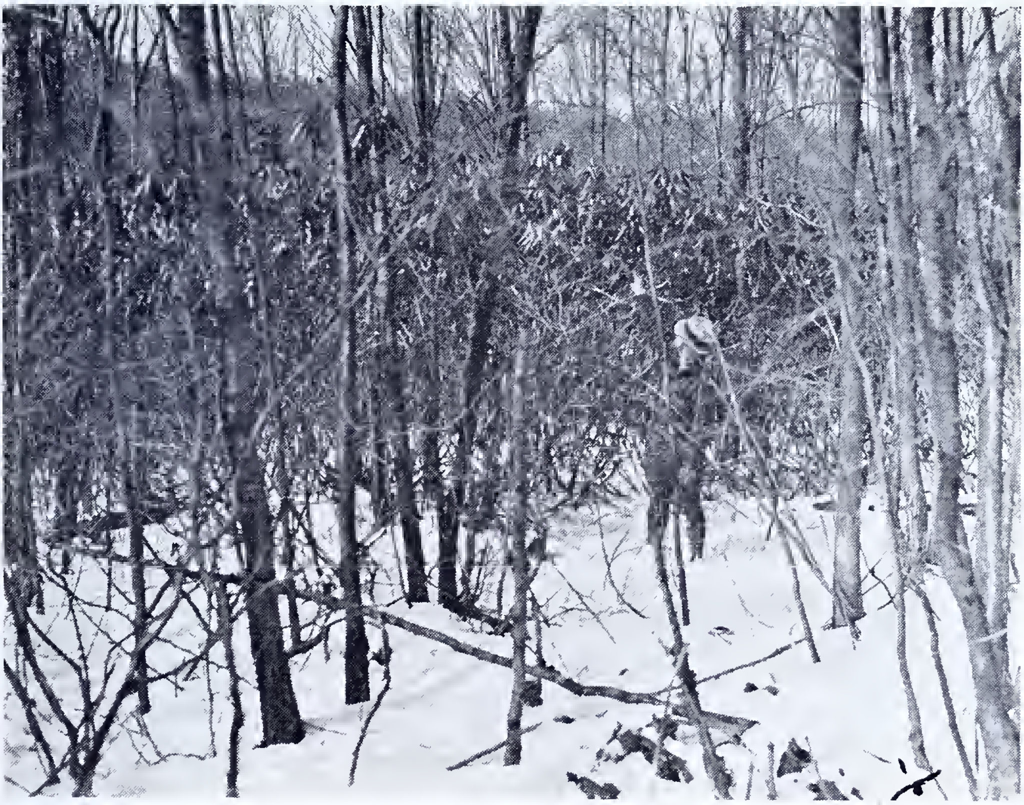


Photo by W. L. R. Drake

Deer browse laurel and rhododendron as high as they can reach. Note the total absence of leaves below the man's hand.

Photo by Dr. C. S. Apgar

Typical of the many unique types of rolling hunting camps seen in Pennsylvania's big game country.

licenses, 800 legal and 9 illegal deer; Monroe County, 1,544 licenses, 141 legal and 12 illegal deer.

When the sportsmen failed to cooperate in promoting special open doe seasons the Commission again attempted to decrease the herd by employing special agents, known for their marksmanship and knowledge of deer hunting, to kill off a number of the older does. But this action, too, was condemned because many hunters believed this privilege should be theirs.

So, after almost every conceivable method of relief was attempted without any noticeable decrease in the herd, the Game Commission, in 1928, declared a statewide open season on antlerless deer weighing fifty pounds or more with entrails removed. And for the first time antlered bucks were protected. This action started one of the greatest controversies in the history of big game management.

No sooner had the Commission declared its intention concerning the statewide doe season than sportsmen almost everywhere were up in arms. Many firmly believed that does would be exterminated at one stroke.

So much controversy arose that a decision from the Attorney General was requested. He declared that the statewide open season on antlerless deer was not legal and that the Commission would have to rescind its ruling and declare a Special Season with a special fee of $2.00 in addition to the regular Resident Hunter's License Fee. Had there not been so much opposition to the Commission's original ruling, in all probability there would have been no special season, and no additional $2.00 fee.

The Commission's next step was to follow the Attorney General's ruling by declaring a Special Season. To curb opposition, it decided to issue special licenses in 1928 only in counties where legal bucks were taken the year before (1927), in a ratio of eight special paid licenses to each legal buck killed in a county, according to records on file at its offices. Under this ruling only 54 of the 67 counties of the Commonwealth were opened to deer hunting during 1928.

The law governing the regulations of the Special Season provided for the issuing of free licenses to persons who resided upon and cultivated lands within the Commonwealth to hunt for deer upon those lands. It also prohibited the issuing of any special deer licenses to non-resident hunters.

With the inauguration of the special season, the Commission was faced with the problem of reimbursing those hunters who had already secured their regular resident licenses with the understanding that they would be permitted to hunt deer under such licenses. This necessitated advising, immediately, all those who took out licenses prior to the ruling of the Attorney General on August 7. Everything possible in the way of information and instructions concerning the special season was placed before the sportsmen through the public press and departmental circulars.

While the Commission, after making careful field studies, was convinced of the fairness of its action, it desired the opinion of some dependable naturalist not residing in Pennsylvania, and therefore asked Dr. Vernon Bailey, for years an official of the U. S. Bureau of Biological Survey, Washington, D. C., to come to Pennsylvania to make a study of the deer problem. After careful and exhaustive studies, Dr. Bailey as a completely unbiased individual confirmed the Commission's judgment.

When the sportsmen realized that the Commission was in earnest about putting the special season through, the opposition took definite form in several counties and injunction proceedings were initiated. The first of these were instigated in certain counties by sportsmen backed by a clique of recreational park and hotel owners who wanted plenty of deer around for the purpose of attracting

Photo by W. L. R. Drake

Many hunters prefer to camp in tents even when heavy snow covers the ground.

Photo by Robert Latimer

Bucks sometimes interlock their antlers when fighting, and failing to disentagle them, starve to death.

Photo by D. L. Batcheler

Deer shed their antlers every year. This basketful was collected by a Game Protector.

trade to their resorts. These men succeeded in having injunctions granted, but at the same time aroused antagonism among people in their counties who did want to hunt deer, and among farmers whose crops were suffering from deer damage.

The opposition in one county, particularly, claimed that while some deer damage occurred in their region, it was not sufficient to warrant a special open season. Yet in 1926, landowners *in that same county* petitioned the Commission to grant one. Following it, came injunctions in six additional counties. Through the efforts of attorneys for the Commonwealth, however, the injunctions in three of these were dissolved before the end of the hunting season.

Injunction proceedings caused protests from both sportsmen and landowners. In another county, for instance, the two remaining hunting days after the dissolution of the injunction were not sufficient to permit the killing of many deer, particularly in the northern end of the county, with the result that the Commission was presented with a petition from 75 landowners in that area asking for immediate relief, citing the fact that many farmers were abandoning their property because of considerable deer damage.

On November 26, 1928, the Commission, upon advice from the Attorney General, stopped the issuance of further special deer licenses anywhere in the Commonwealth. This was done primarily to prevent the issuing of any further injunctions, since it was not certain at that time that a refund of license fees would be authorized should they be granted. Furthermore, the Commission wanted to preclude the possibility of hunters losing both their right to hunt and the money expended for their licenses.

Experience is a great teacher, and the fear on the part of many sportsmen that all female deer would be wiped out, that the illegal kill would equal that of the legal kill, and that the loss of human life would be tremendous, proved to be imaginary. Instead, the results of the season were very gratifying. During the 1928 season, for instance, 25,097 legal deer were taken, as against 14,374 in 1927, when only bucks were legal. Furthermore, hunting accidents were not nearly so numerous as in 1927, only 3 men having been killed and 20 wounded, as against 16 killed and 24 wounded during the preceding year.

During the following year (1929) only bucks were declared legal. In 1930, however, another season on antlerless deer was declared during the last three days of November. Comparatively little opposition arose at this time, although there was statewide objection to the $2.00 special fee which, as a result, was abolished by the Legislature of 1931.

In 1931 both bucks and antlerless deer were declared legal with a weight limit of not less than forty pounds on antlerless deer.

In 1932 the season was opened to the killing of only male deer from December 1 to December 15, it being believed that the sexes had been balanced sufficiently, for a while at least, and that the animals generally had been reduced commensurately with their available food supply.

It is hoped that this little history of our deer herd will prove interesting and valuable. In order to complete the picture, please carefully analyze the table showing the deer kill since 1915, as well as other interesting statistics, which appear on page 12.

Since the law giving farmers the right to kill deer as protection to property went into effect in 1923 to January 1, 1942, the Game Commission has furnished a total of 90,810 rods of fence to protect orchards, farms and commercial truck patches of 391 owners in 45 counties of the State.

Also during that period farmers killed as follows: 1925-26, 311; 1927, 895; 1928, 521; 1929, 1,193; 1930, 1,216; 1931, 1,138; 1932, 621; 1933, 749; 1934, 1,543; 1935, 2,469; 1936, 1,257; 1937, 1,620; 1938, 3,483; 1939, 2,002; 1940, 2,736; and 1941,

While the open doe seasons at the outset created quite a controversy, the majority of hunters gradually began to realize that they had merit and in more recent years endorsed "antlerless deer seasons" as they were later termed.

One important factor not mentioned before, helped to make sportsmen more conscious of the seriousness of the deer problem. That was the fact that deer,

Photo by Leo A. Luttringer, Jr.

Every year fawns are picked up by persons who think they are lost or orphaned, whereas the truth is their parents were probably frightened by their approach and are in hiding nearby. Don't molest the young of any wild creatures, under penalty.

because of their tremendous increase and subsequent fight to secure sufficient food, destroyed much of the food and cover for other forest game, such as ruffed grouse, wild turkeys, snowshoe rabbits, etc.

Today the deer problem is perhaps no less acute in some sections than in 1928, although antlerless deer seasons and combined buck and doe seasons are assuredly effecting more proper control and the animals are being gradually reduced commensurately with their food supply in many areas.

The continuance of such careful management on game and forest lands, including improvement cuttings and releasing from suppression those trees and shrubs which form the creature's natural diet, will go a long way toward effectively solving the deer problem. Under proper management, food conditions will gradually improve, if the herd is kept sufficiently thinned out to make serious competition unnecessary. It is a two-fold problem and must be managed as such.

Deer have no natural enemies, aside from man himself, except the wildcat, which is not present in numbers great enough to aid much in their control. The occasional fawn, or crippled or half starved adult that falls prey to a bobcat, amounts to practically nothing from a control standpoint.

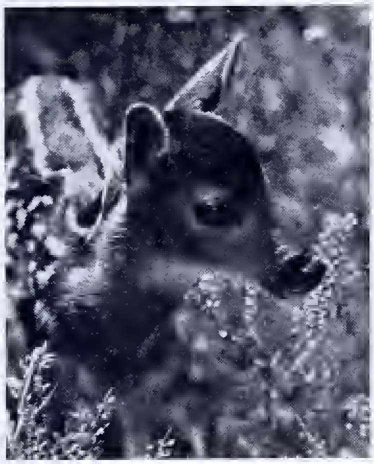
To the average person, a knowledge of the life history of any animal is highly essential if he is to understand the complex problems which are likely to confront it.

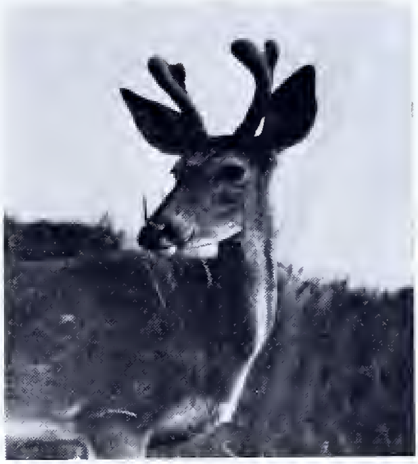
For instance, deer, both browse and graze. They prefer the buds, leaves, and tender twigs of trees and shrubs, but also eat grasses and various aquatic plants. They also eat acorns and are very fond of salt, and consequently are often observed about natural or artificial "salt licks." Like cattle, deer have no incisor teeth in the upper jaw.

Deer are polygamous, and during the rutting season the bucks are very combative. In their fights at this period, they sometimes interlock their antlers and

Photo by W. L. R. Drake

Typical of the more modern, rustic permanent deer camp, of which there are many.





Fawn. *Photos by Dr. C. S. Apgar* **Buck in "velvet."**

eventually die of starvation. Game officials and others have found many racks of shed antlers, some partly eaten by rodents.

During the mating season, the necks of the males are very much enlarged. When fighting they use both antlers and forefeet with which they strike with amazing rapidity. Their normal lifetime is about ten to fifteen years. Deer, when running, can attain a speed of about thirty miles an hour. They can clear a six-foot fence with ease and have been known to make a running jump of over forty feet. Does and fawns render a bleating call when frightened. Bucks and does often snort when startled, the former sometimes making a loud whistling sound.

An adult white-tailed buck averages from 5 to 6 feet in length and is about 3 feet high at the shoulders. Does are smaller. The average adult Pennsylvania buck under normal conditions, should weigh from 140 to 175 pounds dressed, although weighing 200 pounds or over have been taken.

The gestation period is about 7 months. Fawns, usually two and rarely three in number, are born in May or June and weigh from 4 to 8 pounds each. They do not follow their mothers for the first few weeks. They are reddish brown, covered with numerous white spots, which gradually disappear as winter approaches. The skulls of baby deer of both sexes are similar, but as the baby buck grows, the top of the skull develops two projections, known as "pedicles," which provide the future base for the antlers. As the skull becomes larger and thicker, the pedicles, which have spread out during growth, do not noticeably protrude above the surrounding bone surface.

The antlers (occasionally, though rarely, a doe grows antlers) are shed each year during the winter from late December until March. New antlers begin to appear in April and by late summer have attained their full size, although they are still in the "velvet" and rather soft. The "velvet" or thin covering of fine velvety-like skin is rubbed off on trees and brush about September, at which time the antlers are well hardened. Growing antlers are very soft and any injury to them may result in permanent disfigurement. "Freak" antlers are usually formed in this way.

The first set of antlers normally matures when the deer is about a year and a half old. At this time they contain no prongs and these deer are therefore referred to as "spike bucks." The next set of antlers usually forms a "Y" or two-point, as they are commonly called by the hunters. Additional points may appear each year, depending upon the health and stamina of the individual, until the animal is fully mature at four to five years. However, the number of points on the antlers is never a safe guide by which to determine the age of a male deer, since the size of the antlers depends almost wholly upon the physical development and food supply of the animal.

EP 1954
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	KILL OF DEER		HUNTING ACCIDENTS		HUNTING LICENSES	
	Bucks	Does	Fatal	Non-Fatal	Res.	Non. Res.
1915	1,287	—	29	119	262,355	532
1916	1,732	—	30	102	290,422	662
1917	1,725	—	26	75	315,474	588
1918	1,754	—	19	48	311,290	478
1919	2,939	—	35	128	401,130	1,128
1920	3,300	—	43	85	432,240	1,725
1921	4,840	—	29	130	462,371	1,761
1922	6,115	—	37	125	473,735	2,120
1923	6,452	8	55	106	497,191	2,328
1924	7,778	126	38	131	501,572	2,558
1925	7,287	1,029	52	229	521,855	3,190
1926	11,646	1,295	47	197	520,574	3,468
1927	14,374	—	67	279	501,622	4,879
1928	—	25,097	45	238	437,727	1,190
1929	22,822	—	53	219	505,103	4,823
1930	20,115	5,979	59	291	530,390	6,005
1931	24,796	70,255	72	367	572,779	8,967
1932	19,724	—	54	275	537,451	5,252
1933	20,480	—	31	252	524,337	4,966
1934	21,137	—	28	254	568,666	6,024
1935	23,802	46,668	55	252	606,107	8,461
1936	18,084	—	23	159	534,830	*7,122
1937	39,347	—	45	336	598,261	8,357
1938	—	171,662	50	438	654,146	7,584
1939	49,106	14,581 (4 Counties)	44	346	653,852	9,049
1940	40,995	145,580	43	419	666,420	12,748

SEASONS AND BAG LIMITS

1915	1 male with horns	December 1-December 15
1917	1 per season, 6 a camp (2″ above hair)	December 1-December 15
1919	1 per season, 6 a camp	December 1-December 15
1921	1 per season, 6 a camp (4″ above skull)	December 1-December 15
1923	1 per season, 6 a camp (2 or more points (6″ above skull)	December 1-December 15
1925	1 per season, 6 a camp (2 or more points) (6″ above skull)	December 1-December 15
1927	1 per season, 6 a camp (2 or more points)	December 1-December 15
1928	1 per season, 6 a camp (antlerless deer, 50 lbs.) (bucks, 2 points)	December 1-December 15 December 1-December 15
1929	1 per season, 6 a camp	December 1-December 15
1930	1 per season, 6 a camp (antlerless, 60 lbs., 3 day season) (bucks, 2 points)	November 28, 29, 30. December 1-December 15
1931	1 per season, 6 a camp (antlerless, 40 lbs.) (bucks, 2 points)	December 1-December 15 December 1-December 15
1932	1 per season, 6 a camp	December 1-December 15
1933	1 per season, 6 a camp	December 1-December 15
1934	1 per season, 6 a camp	December 1-December 15
1935	1 per season, 6 a camp (bucks) (antlerless)	December 2-December 11 **Dec. 12, 13, 14.
1936	1 per season, 6 a camp	December 1-December 12
1937	1 per season, 6 a camp (male, 2 or more points to an antler)	November 29-December 11
1938	1 per season, 6 a camp (antlerless, all counties)	November 28-December 3
1939	1 per season, 6 a camp (male, 2 or more points to an antler) (except last 2 days; antlerless deer may be killed, four counties only)	December 1-December 15
1940	1 per season, 6 a camp (Both sexes except those with visible spike antler or antlers without points)	December 2-December 14
1941	1 per season, 6 a camp (male, 2 or more points to an antler)	December 1-December 13

NOTE: In cases where the years are not listed, regulations for those years were the same as previous years.

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* In 1936, 2 alien non-resident hunter's licenses were issued.

** In 1935 the antlerless deer season was declared in only 14 counties.

WERT
BOOKBINDING
MIDDLETOWN, PA.
SEPTEMBER '73